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ABSTRACT

The purpose of this program was to demonstrate the effectiveness of a tape-recorded, sequenced program of auditory perceptual training in raising the reading and listening skill levels of students in grades two to six. Eighty-five boys and 67 girls in the second grade and 25 boys and 14 girls in learning disability group clinics in grades two to six participated in the program. The students were given tape-recorded lessons twice a week. The lessons were given free field by the teachers in the second grade classrooms to the entire class at one time. In the learning disability groups, children took the lessons in groups of two to six in listening centers. A total of 39 lessons and four Interim Review Tests, also tape-rocorded, were given over a six-month period. Children in the learning disability groups could take the lessons over until they mastered them before taking the Interim Review Tests. The Gilmore Oral Reading Test, a tape-recorded criterion-referenced listening test, the Lindamood Auditory Conceptualization Test, and the Short Form Test of Academic Ability were used to assess progress. The results indicated that criterion levels were reached on three of the four Interim Review Tests. The students made significant pre-post test gains on most of the variables, but replication of the study for a third year was suggested. (WR)

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ED 079694

READING IMPROVEMENT THROUGH

AUDITORY PERCEPTUAL TRAINING

End of Budget Period Report

July 1,1971 - June 30,1972

ESEA Title III

Alameda County School Department

CS 000 646

ED 079694

READING IMPROVEMENT THROUGH AUDITORY PERCEPTUAL TRAINING

ESEA Title III Project 0471
P.L. 89-10, amended by P.L. 90-247

END OF BUDGET PERIOD REPORT

FOR

JULY 1, 1971 - JUNE 30, 1972

by

Belle Ruth Witkin, Ph.D.
Project Director

June 1972

Rock La Fleche
Superintendent of Schools, Alameda County
224 West Winton Avenue
Hayward, California 94544

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END OF BUDGET PERIOD REPORT

ESEA, TITLE III

COMPONENT I

STATISTICAL DATA

Bureau of
Instructional
Program Planning
and Development

California State Department of Education
721 Capitol Mall
Sacramento, California 95814

ESEA TITLE III STATISTICAL DATA
Elementary and Secondary Education Act of 1965
(P.L. 89-10 as amended by P.L. 90-247)

THIS SPACE FOR STATE USE ONLY →	County	DistrictCode	Project #	Type	

SECTION A - PROJECT INFORMATION

1. REASON FOR SUBMISSION OF THIS FORM *(Check one)*
A ☐ INITIAL APPLICATION FOR TITLE III GRANT OR RESUBMISSION
B ☐ APPLICATION FOR CONTINUATION GRANT
C ☒ END OF BUDGET PERIOD REPORT

2. IN ALL CASES EXCEPT INITIAL APPLICATION, GIVE ASSIGNED PROJECT NUMBER
0471

3. MAJOR DESCRIPTION OF PROJECT: *(Check one only)*
A ☒ INNOVATIVE
C ☐ ADAPTIVE
B ☐ EXEMPLARY

4. TYPE(S) OF ACTIVITY *(Check one or more)*
A ☐ PLANNING OF PROGRAM
C ☒ CONDUCTING PILOT ACTIVITIES
E ☐ CONSTRUCTING
B ☐ PLANNING OF CONSTRUCTION
D ☐ OPERATION OF PROGRAM
F ☐ REMODELING

5. PROJECT TITLE *(5 Words or Less)*
Reading Improvement through Auditory Perceptual Training

6. BRIEFLY SUMMARIZE THE PURPOSE OF THE PROPOSED PROJECT AND GIVE THE ITEM NUMBER OF THE AREA OF MAJOR EMPHASIS AS LISTED IN SEC. 303, P.L. 89-10. *(See instructions)*

To develop and field test self-contained packages of diagnostic and instructional materials in auditory perception designed to improve the reading achievement of elementary school children reading below the mean for their chronological age. The packages will contain tape recordings, student and teacher manuals, and an inservice program for teachers.

ITEM NUMBER 1 - 3

7. NAME OF APPLICANT *(Local Education Agency)*
Alameda County
Superintendent of Schools

8. ADDRESS *(Number, Street, City, State, Zip Code)*
224 West Winton Avenue
Hayward, California 94544

9. NAME OF COUNTY
Alameda

10. CONGRESSIONAL DISTRICT
8, 9

11. NAME OF PROJECT DIRECTOR
Belle Ruth Witkin, Ph.D.

12. ADDRESS *(Number, Street, City, State, Zip Code)* (Bus.)
224 West Winton Avenue
Hayward, California 94544

PHONE NUMBER (Bus.)
783-5800
AREA CODE
415

13. Name of Authorized Agent
Rock La Fleche

14. ADDRESS *(Number, Street, City, State, Zip Code)* (Bus.)
224 West Winton Avenue
Hayward, California 94544

PHONE NUMBER (Bus.)
783-5800
AREA CODE
415

15. POSITION OR TITLE
Alameda County Superintendent of Schools

Signature of Authorized Agent
Roger J. Schulte, Asst. Supt

DATE SUBMITTED
6/30/72

SECTION A – Continued

16. LIST THE NUMBER OF EACH CONGRESSIONAL DISTRICT SERVED 8, 9	17A. TOTAL NUMBER OF COUNTIES SERVED 1 B. TOTAL NUMBER OF LEA'S SERVED 22 C. TOTAL ESTIMATED POPULATION IN GEOGRAPHIC AREA SERVED 1,119,000	18. LATEST AVERAGE PER PUPIL ADA EXPENDITURE OF LOCAL EDUCATION AGENCIES SERVED $ 976.15

SECTION B – TITLE III BUDGET SUMMARY FOR PROJECT (Include amount from item 2c below)

1.		PREVIOUS OE GRANT NUMBER	BEGINNING DATE *(Month, Year)*	ENDING DATE *(Month, Year)*	FUNDS REQUESTED
A.	Initial Application or Resubmission		7/1/70	6/30/71	$ 71,349
B.	Application for First Continuation Grant	01-00000-0471-0	7/1/71	6/30/72	$ 87,471
C.	Application for Second Continuation Grant		7/1/72	6/30/73	$ 82,504
D.	Total Title III Funds				$241,324
E.	End of Budget Period Report	01-00000-0471-0	7/1/71	6/30/72	

2. *Complete the following items only if this project includes construction, acquisition, remodeling, or leasing of facilities for which Title III funds are requested. Leave blank if not appropriate.*

A *Type of function (Check applicable boxes)*

1 ☐ REMODELING OF FACILITIES
2 ☐ LEASING OF FACILITIES
3 ☐ ACQUISITION OF FACILITIES
4 ☐ CONSTRUCTION OF FACILITIES
5 ☐ ACQUISITION OF BUILT-IN EQUIPMENT

B 1. TOTAL SQUARE FEET IN THE PROPOSED FACILITY ______

2. TOTAL SQUARE FEET IN THE FACILITY TO BE USED FOR TITLE III PROGRAMS ______

C AMOUNT OF TITLE III FUNDS REQUESTED FOR FACILITY $______

SECTION C – SCHOOL ENROLLMENT, PROJECT PARTICIPATION DATA AND STAFF MEMBERS ENGAGED

1.			PRE-KINDERGARTEN	KINDERGARTEN	GRADES 1-6	GRADES 7-12	ADULT	OTHER	TOTALS	STAFF MEMBERS ENGAGED IN IN-SERVICE TRAINING FOR PROJECT
A	School Enrollment in Geographic Area Served	(1) Public	1,471	16,870	106,768	100,067	26,447	31,007	282,630	
		(2) Non-public		594	11,008	8,615		1,504	21,721	
B	Persons Served by Project	(1) Public			322 (706)				322 (706)	14 (23)
		(2) Non-public			45 (87)				45 (87)	1 (3)
		(3) Not Enrolled								
C	Additional Persons Needing Service	(1) Public			14,090	estimated				
		(2) Non-public			2,152					
		(3) Not Enrolled								

2.	TOTAL NUMBER OF PARTICIPANTS BY RACE *(Applicable to figures given in item 1B above)*	WHITE	NEGRO	AMERICAN INDIAN	OTHER NON-WHITE	TOTAL
		311 (589)	49 (103)	4 (7)	3 (94)	367 (793)

Figures in circles indicate totals for the two years of the project.

SECTION C - continued

3. RURAL/URBAN DISTRIBUTION OF PARTICIPANTS SERVED OR TO BE SERVED BY PROJECT

PARTICIPANTS	RURAL		METROPOLITAN AREA		
	FARM	NON-FARM	CENTRAL-CITY	NON-CENTRAL CITY	OTHER URBAN
PERCENT OF TOTAL NUMBER SERVED			46%	54%	

SECTION D - PERSONNEL FOR ADMINISTRATION AND IMPLEMENTATION OF PROJECT

1. PERSONNEL PAID BY TITLE III FUNDS

TYPE OF PAID PERSONNEL	REGULAR STAFF ASSIGNED TO PROJECT			NEW STAFF HIRED FOR PROJECT		
	FULL-TIME 1	PART-TIME 2	FULL-TIME EQUIVALENT 3	FULL-TIME 4	PART-TIME 5	FULL-TIME EQUIVALENT 6
A. ADMINISTRATION/ SUPERVISION				1 ①		
B. TEACHER:						
(1) PRE-KINDERGARTEN						
(2) KINDERGARTEN						
(3) GRADES 1-6						
(4) GRADES 7-12						
(5) OTHER						
C. PUPIL PERSONNEL SERVICES						
D. OTHER PROFESSIONAL				1		
E. ALL NON-PROFSSIONAL				2	5 ㉝	

F. FOR ALL CONSULTANTS PAID BY TITLE III FUNDS → (1.) TOTAL NUMBER RETAINED 7 (2.) TOTAL CALENDAR DAYS RETAINED Performance contracts - Budget year.

2. PERSONNEL NOT PAID BY TITLE III FUNDS

TYPE OF UNPAID PERSONNEL	REGULAR STAFF ASSIGNED TO PROJECT			NEW STAFF HIRED FOR PROJECT		
	FULL-TIME 1	PART-TIME 2	FULL-TIME EQUIVALENT 3	FULL-TIME 4	PART-TIME 5	FULL-TIME EQUIVALENT 6
A. ADMINISTRATION/ SUPERVISION		7 ⑰				
B. TEACHER:						
(1) PRE-KINDERGARTEN						
(2) KINDERGARTEN						
(3) GRADES 1 TO 6		20 ㊶				
(4) GRADES 7-12						
(5) OTHER						
C. PUPIL PERSONNEL SERVICES						
D. OTHER PROFESSIONAL		- ②				
E. ALL NON-PROFESSIONAL						

F. FOR ALL CONSULTANTS NOT PAID BY TITLE III FUNDS → (1.) TOTAL NUMBER RETAINED - ③ (2.) TOTAL CALENDAR DAYS RETAINED - ⑧

SECTION E - PROJECT CLASSIFICATION

1. Project Subjects

☒ - Language Arts (Development)
☐ - Fine Arts
☐ - Foreign Language
☐ - Mathematics
☐ - Science
☐ - Social Science, Humanities
☐ - P.E., Recreation, and Health
☐ - Vocational Education
☐ - Other

2. Handicapped Education

☐ - Mentally Retarded
☐ - Hard of Hearing
☐ - Deaf
☐ - Speech Impaired
☐ - Visually Handicapped
☐ - Seriously Emotionally Disturbed
☐ - Crippled
☒ - Other Health Impaired
Learning Disability Groups

3. Guidance, Counseling, and Testing

☐ - Counseling with Handicapped
☐ - Group Guidance Activities
☐ - Group Counseling
☐ - Career Guidance and Counseling
☐ - Counseling with Special Problems
☐ - Use of Paraprofessionals
☐ - Parent Conferences
☐ - Follow-up and Drop-out Studies
☐ - Inservice Training
☐ - Use of Community Resources
☐ - Curriculum Development
☐ - General Counseling
☐ - Consultation with Teachers
☐ - Program Evaluation and Development

4. Grade Levels

☐ - Preschool (indicate ages 3 or 4) ____________
☒ - Elementary (indicate grades K-6) 2 - 6
☐ - Secondary (indicate grades 7-12) ____________
☐ - Junior College (indicate grades 13-14) ________
☐ - Adult

5. Is your project an adoption or adaptation of another Title III project? ☐ Yes ☒ No

If yes, name the agency operating the project: ____________________

END OF BUDGET PERIOD REPORT

TITLE III, ESEA

COMPONENT II

DATA FOR U.S. OFFICE OF EDUCATION

COVER PAGE

for Component II

Data for U. S. Office of Education

(To be completed for all projects active for any period between July 1971 - through June 30, 1972. Agencies having more than one project must prepare a report for each project.)

Enter information for items 1 through 7.

1. 0471
Project No.

2. Reading Improvement through Auditory Perceptual Training.
Project Title

3. Alameda County Superintendent of Schools
Local Educational Agency

224 West Winton Avenue
Hayward, CA 94544
Address

4. Rock La Fleche, Superintendent
Name of school official responsible for this report

783-5800
Phone No.

5. Belle Ruth Witkin, Ph.D.
Name of Project Director

783-5800
Phone No.

6. The 1971-72 school year has been .....

6.1 ☐ The first year of operation.

6.2 ☒ The second year of operation.

6.3 ☐ The third year of operation.

6.4 ☐ A project which ended on or before June 30, 1971 but had a special extension to operate a period of time after July 1, 1971.

7. Enter the following dates:

Ending date for first year June 30, 1971

Ending date for second year June 30, 1972

Ending date for third and final year June 30, 1973

Ending date for extension period if extension was granted ______

PART I - STAFF DEVELOPMENT

The report should describe project staff development activities that took place during the period July 1, 1971, through June 30, 1972. If no project staff development activities occurred, write NONE in the first column. Staff development activities are those inservice efforts designed to improve competencies of the staff working full or part-time on the project. Enter the figures in columns two and three.

STAFF DEVELOPMENT ACTIVITIES OF ONE OR MORE DAYS DURATION
1971-72

(1)	(2)	(3) No. of workshops, conferences and seminars held by type of training			
Definition of Staff: (Staff includes all personnel assigned to work on the project full or part time, whether paid by the district or the project.)	Total No. of participants (Unduplicated) in all activities.	Dissemination to spread information about project	Evaluation to appraise progress	Combination of dissemination & evaluation	Other, such as in-service education. Specify (Use back of this page.)
→	49	1	2	2	--

PART II - EXTENT OF ADOPTION/ADAPTION

1971-1972 **DOES NOT APPLY**

The purpose of this section is to find out how many projects are being continued to some extent by the grantee or by other school districts after federal funds have expired.

The report should be limited to projects for which federal funds expired during the period July 1, 1971 through June 30, 1972. If the grantee district expects to continue the project to some extent during the next fiscal year, this should be reported by marking the box. The estimated extent of adoption or adaption by the grantee district should be shown by circling the appropriate percentage figure in the five point scale.

1. The project is being continued by the grantee in some form after federal funds expired. ☐ Yes ☐ No

2. If the answer is YES, draw a circle around the figure which represents your estimate of the degree of adoption/adaption of the project in your school district.

20% 40% 60% 80% 100%

PART III - EXTENT OF PARTICIPATION

1971-1972

The purpose of this part of the report is to find out the actual direct or indirect participation of public and private school pupils and adults in the project during the 1971-72 operational period.

Any participation should be reported only once. The count should be based on actual participation during the 1971-72 school year. The numbers are almost certain to be different from those anticipated in the project application.

The United States Office of Education definitions should be applied:

Direct Participation - Enter the number of different persons participating in activities involving face-to-face interaction of pupils and teachers (in case of in-service training, teachers and instructors) designed to produce learning, in a classroom, a center or mobile unit; or receiving other special services.

Indirect Participation - Enter the number of different persons visiting or viewing exhibits, demonstrations, museum displays; using materials or equipment developed or purchased by the project; attending performances of plays, symphonies, etc.; viewing television instruction in a school, a center, or home; or participating in other similar activities. Carefully prepared estimates are acceptable.

Elementary - For reporting purposes only, consider elementary as being Pre-Kindergarten through Grade 6.

Secondary - For reporting purposes only, consider secondary as being Grades 7 through 12.

Please supply the information requested for the project.

Item I

G. NUMBER OF PUBLIC AND NONPUBLIC SCHOOL STUDENTS, TEACHERS, AND COUNSELORS PARTICIPATING

SCHOOLS (a)	* DIRECT PARTICIPATION						**INDIRECT PARTICIPATION					
	STUDENTS		TEACHERS		COUNSELORS		STUDENTS		TEACHERS		COUNSELORS	
	ELEMENTARY (b)	SECONDARY (c)	ELEMENTARY (d)	SECONDARY (e)	ELEMENTARY (f)	SECONDARY (g)	ELEMENTARY (h)	SECONDARY (i)	ELEMENTARY (j)	SECONDARY (k)	ELEMENTARY (l)	SECONDARY (m)
Public	158		13				120 (est.)		5			
Nonpublic	33		1									

*Experimental classes in Alameda County districts only.

Item II Indicate how many of the above students are from rural/urban areas. Totals should equal the figures above.

Rural areas ______________
(Farm or cities under 2,500 pop.)

Urban areas 191 (Alameda County)
(Cities over 2,500 pop.)

The total of these must equal b, elementary, c, secondary, from Item 1 above.

**Alternate test sites: Santa Ana, California, and Eastern Washington State College, Cheney, Washington. No cost to Title III.

7/

PART IV

Information in Part IV is only for the past budget period.
Note: The total number of students in the following 3 charts must agree one with the other.

X - Experimental group
C - Control group

PROGRAM (a)	Check subject area covered	No. of students participating	Amount granted this past year
Reading	X	X-191	$ 87,471
Environment/Ecology		C-176	$
Equal Educational Opportunity			$
Model Cities *(Urban, Inner-City)*			$
Gifted			$
Handicapped			$
Guidance and Counseling			$
Drug Education			$
Early Childhood Education			$
Other Programs			$

NUMBER OF STUDENTS SERVED BY TARGET POPULATIONS *(Figures may be duplicated)*

STUDENTS (a)	PROJECT FOR INDIANS (b)	PROJECT FOR MIGRANTS (c)	PROJECT FOR DISADVANTAGED (d)	PROJECT FOR HANDICAPPED (e)	PROJECT FOR EARLY CHILDHOOD EDUCATION (f)	PROJECT FOR OTHER TARGET POPULATIONS *(Specify)** (g)
Number of Students						367

*2nd Grade low readers with auditory perceptual problems and 2-6 Graders in learning disability clinics.

Provide unduplicated counts of target population students by grade levels.

Levels	Pre-K	K	1	2	3	4	5	6	7	8-9	10	11	12
Public			4	256	17	20	19	6					
Non-public				45									

Provide number of professional staff directly involved in project. See Part III for definitions - directly/indirectly.

	* Elementary Basic Skills		Secondary Basic Skills		Secondary vocational skills & attitudes	
Project for...	Under Half-time	Full Time	Under Half-time	Full Time	Under Half-time	Full Time
Handicapped						
Non-handicapped	X - 14 C - 6					

*Includes classroom teachers only.

Provide number of non-professional staff directly involved in project.

Project for...	Less than half-time	Full time
Handicapped children		
Regular elementary and secondary students		

Provide number of teachers who had training as a result of project and cost of training-count can be duplicated.

	Number	Cost of activity
Workshops (training meetings) 6	51	$647.91
Orientations 2	47	

For the above number, indicate how many participated in workshops lasting more than four weeks. 0 .

Provide number of schools in project.

Elementary 10
Secondary

Provide number of non-certificated personnel who received training from the project and cost of training.

Number: Cost of Training: $

Provide number of students participating in project activities in summer school in 1972 at the levels indicated.

Pre-kindergarten:
Kindergarten:
Other Elementary:
Secondary:

PART V - ABSTRACT

GRANTEE Alameda County Superintendent of Schools

PROJECT ABSTRACTS	STATE	TOTAL PROJECT PERIOD	FROM (Month and year)	TO (Month and year)	PROJECT NO.
	California		July 1970	June 1973	0471

NOTE: If project involves handicapped children and/or personnel working with handicapped children who are paid from Title III funds, complete the information on the back of this form.

TITLE OF PROJECT	GRANTEE
Reading Improvement through Auditory Perceptual Training	Alameda County Superintendent of Schools

PROJECTED FUNDING LEVEL FOR PROJECT PERIOD	19__ $__	19__ $__	19__ $__	19__ $__	19__ $__	19__ $__

TARGET POPULATION

85 boys and 67 girls in grade 2, and 25 boys and 14 girls in learning disability group clinics in grades 2 to 6. 136 were white, 23 black, 2 oriental, 3 American Indian, and 27 Spanish surname. All social classes were represented, but 90 percent were of average or low social class.

PARAGRAPH DESCRIPTION

Students learned to improve their auditory perceptual skills by taking tape-recorded lessons twice a week. The lessons were given free field by teachers in the second grade classrooms to the entire class at one time. In the learning disability groups, children took the lessons in groups of two to six in listening centers, sometimes using earphones. There were 39 lessons given over a six-month period from November through April. Four Interim Review Tests, also tape-recorded, were given. Children in the learning disability groups could take the lessons over until they mastered them before taking the Interim Review Tests. The lessons were developed specifically for this project.

MAJOR OBJECTIVES

To demonstrate the effectiveness of a tape-recorded, sequenced program of auditory perceptual training, in raising the reading and listening skill levels of students in grades 2 to 6. By June 1973, the project will have demonstrated the utility and feasibility of the APT program in raising the level of auditory perceptual skills of primary grade children to specified criteria, and will furnish guidelines and cost/effectiveness data for its adaptation to a variety of grade levels, student learning abilities, classroom situations, and teacher interventions.

ACTIVITIES TO ACHIEVE OBJECTIVES

1.0 Provide management capability for the project.
2.0 Develop and produce revised materials for field testing.
3.0 Conduct field test of revised materials.
4.0 Conduct process evaluation.
5.0 Conduct product evaluation.
6.0 Provide for dissemination.

EVALUATION STRATEGY

Three-way analysis of covariance, using one analysis with gain scores in reading as the dependent variable, the other with gain scores in listening as the dependent variable. Tests used were: Gilmore Oral Reading Test, a tape-recorded criterion-referenced listening test, Lindamood Auditory Conceptualization Test, and the Short Form Test of Academic Ability. The listening test was developed specifically for this project.

EVALUATION FINDINGS

Criterion levels were reached on 3 of the 4 Interim Review Tests. The fourth unit proved too difficult, and is being revised. APT program students made significant pre-post test gains on most of the variables, but due to non-comparability of the comparison groups, results were not conclusive and the design will need replication in the 3rd year.

DOES NOT APPLY

HANDICAPPED PROJECT PARTICIPATION ONLY - ESEA TITLE III

1. HANDICAPPED CHILDREN SERVED, PERSONNEL PAID, AND IN-SERVICE TRAINING RECEIVED WITH ESEA TITLE III FUNDS

TYPE OF HANDICAPPED CHILDREN SERVED*	NUMBER OF CHILDREN SERVED					FULL-TIME EQUIVALENCE OF PROJECT PERSONNEL PAID WITH TITLE III FUNDS				PERSONNEL RECEIVING IN-SERVICE TRAINING WITH TITLE III FUNDS			
	3-5 YEARS	6-12 YEARS	13-18 YEARS	19 & OVER	TOTAL	TEACHERS	TEACHER AIDES	OTHER	TOTAL	TEACHERS	TEACHER AIDES	OTHER	TOTAL
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*	*(g)*	*(h)*	*(i)*	*(j)*	*(k)*	*(l)*	*(m)*	*(n)*
(1) TMR													
(2) EMR													
(3) HH													
(4) DEAF													
(5) SI													
(6) VI													
(7) ED													
(8) CR													
(9) LD													
(10) OHI													
(11) TOTAL													

2. NUMBER OF HANDICAPPED CHILDREN SERVED WHO ATTEND NON-PUBLIC SCHOOLS	

3. DISTRIBUTION BY ETHNIC GROUPS

POPULATION	NEGRO	INDIAN	ORIENTAL	SPANISH SURNAME	WHITE *(Other than Spanish surname)*	OTHER	TOTAL
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*	*(g)*	*(h)*
Student Participants							

4. CHILDREN RECEIVING SERVICES - DISTRIBUTION BY DEMOGRAPHIC AREA

CATEGORY	NUMBER
(1) Urban Areas *(over 50,000)*	
(2) Rural Areas *(under 2,500)*	
(3) Other Demographic Areas *(from 2,500-50,000)*	
(4) TOTAL *(Sum of lines (1), (2), and (3))*	

INSTRUCTIONS

1. **CHILDREN SERVED** – Enter in the appropriate columns b, c, d, and e an unduplicated count of children served by type of primary handicap *(in public and non-public schools)* and by age group who received direct instructional or related services with Title III funds. This count should include all handicapped children *(1)* who received direct services from personnel paid with Title III funds and/or *(2)* who received substantial benefit as a result of the purchase or projects equipment or the provision of significant in-service training of personnel with Title III funds. Do not include handicapped children who received only incidental services, such as preliminary vision screening or audiological testing, etc. Column f should equal columns b, c, d, and e.

   PROJECT PERSONNEL – Enter in the appropriate columns g, h, and i corresponding with the primary type of handicapped children served a figure representing an unduplicated count of the full-time personnel plus the full-time equivalency of part-time personnel paid from Title III funds. Full-time personnel are those personnel who were assigned to Title III project activities 40 hours or more per week *(or the number of hours in a regular work week, as determined by the State or local education agency)*. They may be school year, summer program, or 12-month personnel. Column j should equal columns g, h, and i.

   IN-SERVICE TRAINING – Enter in the appropriate columns k, l, and m corresponding with primary type of handicapped children served an unduplicated count of all personnel who receive in-service training with Title III funds. Column n should equal columns k, l, and m.

2. **NON-PUBLIC SCHOOLS** – Of the total number of handicapped children served with Title III funds *(1.(11), (f))*, indicate the number who attended non-public schools.

3. **DISTRIBUTION BY ETHNIC GROUPS** – Enter in the appropriate columns b, c, d, e, f, and g an unduplicated count of the handicapped children served with Title III funds by ethnic group membership. Column h should equal columns b, c, d, e, f, and g.

4. **DISTRIBUTION BY DEMOGRAPHIC AREAS** – Self-explanatory.

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* **TMR** - Trainable Mentally Retarded, **EMR** - Educable Mentally Retarded, **HH** - Hard of Hearing, **SI** - Speech Impaired, **VI** - Visually Impaired, **ED** - Emotionally Disturbed, **CR** - Crippled, **LD** - Learning Disabled, **OHI** - Other Health Impaired

PART VI - PRODUCTS OF PROJECT

	I Product(s) Developed	II Date mailed to Title III	III Annotations
	Curriculum guides		
	Teacher guides		
	Handbooks of materials, techniques, and procedures		
	Monograph		
X 1	Bibliography	6/28/72	1. "Recent Research Related to Listening." A selected bibliography of recent books and articles related to auditory perception and comprehension.
X 2	Questionnaires - locally developed	"	2. Listening and reading survey -- sent to parents of all students in project. 2 forms: English and Spanish.
	Evaluation tests		
X 3	Audio tape ~~cassettes~~	"	3. A set of reel-to-reel tapes comprising the Auditory Perceptual Training Program, revised for 1971-72. The set covers 39 lessons (average 10 minutes each) divided into four units.
X 4	Brochures, newsletters and information sheets	"	4. Information sheet and list of behavioral objectives to accompany the audio tapes.
	16 mm Films		
	8 mm Films		
	Filmstrips		
X 5	Instructional workbooks, materials,	"	5. Listening Books used by the students to accompany the audio tapes.
	Tests - locally developed		
	Kits		
	Models		
	Microcards		
	Microfilm		
	Maps		
	Pictures		
	Posters		
	Records		
	Set		
	Slides/tape		
	Viewmasters		
	Video Tape		
	(Other)		

END OF BUDGET PERIOD REPORT

TITLE III, ESEA

COMPONENT III

PROGRAM NARRATIVE REPORT

PROGRAM

Activities or Services

1. What were the main activities (or services) in the program?
2. How were these activities (or services) related to specified program objectives?
3. What methods were used in carrying out each activity (or service)?
4. What was a typical day's or week's schedule of activities for the children (or others) who received the program?
5. How were pupils grouped for the various program activities?
6. What were teacher-pupil ratios (or aid-pupil, or adult-pupil, and so on) in each of these groupings?
7. How did pupils (or others) receive feedback on their individual daily progress?
8. How did parents receive feedback on their child's progress?
9. What amounts and kinds of practice, review, and quiz activities were provided for pupils (or others) in the program?
10. What special provisions were made for motivating pupils (or others)?
11. If a comparison group was used, what were important differences in the activities and methods used in this group and the activities and methods used with the program group?

1.0 What were the main activities (or services) in the program?

1.1 Revision of the APT program materials from 1970-71 and development of new materials. Total package included a criterion-referenced tape-recorded test, the Composite Auditory Perceptual Test (CAPT), consisting of two sections, each one-half hour in length; 39 tape-recorded lessons, averaging 9 to 13 minutes in length; four Interim Review Tests, also criterion-referenced; and student response booklets to accompany all tapes.

1.2 All students in experimental and control groups were given a battery of individual and group pretests and posttests.

1.3 From November 1971 to April 1972, the students in the experimental classrooms received the tape-recorded APT lessons. There were two groups: Group A, children in second grade classrooms, most of whom were below grade level in reading ability; and Group B, children who were attending learning disability group clinics for a part of their instruction, and who were in grades two through six.

1.4 Orientation and evaluation workshops were held for participating teachers and administrators.

2.0 How were these activities (or services) related to specified program objectives?

All of the activities were in direct support of the mission objective for 1971-72, which had been stated as follows:

"The mission objective for the second year of the project will be to demonstrate the effectiveness of the Auditory Perceptual Training program (APT) developed by the project, in improving the reading ability and auditory perceptual abilities of students in two target populations, Groups A and B" (described in question 1 above).

All activities supported a field test of the materials which had been developed specifically for the project. The field testing activities were designed to demonstrate whether the experimental groups made a statistically significant gain in both auditory perceptual abilities and oral reading abilities over a control group, in order to determine whether the APT program would be generalizable to similar groups.

3.0 Methods used in carrying out each activity (or service).

3.1 Revision of materials

Three principal consultants, who had developed the materials specifically for the project, were engaged in the revision. They were:

Katharine G. Butler, Ph.D., San Jose State College
Dona Lea Hedrick, Ph.D., University of Washington
Charlie C. Manning, Ph.D., Mary Bridge Children's Hospital, Tacoma, Washington

An editorial consultant, Molly Cone, who is a well-known author of children's books, assisted in the revision and designed the student response booklets.

All tape-recorded and printed materials were developed according to exacting specifications.

3.2 Testing

The tape-recorded pre- and posttest and a group achievement test were administered by the technical assistant to the project. An oral reading test was administered individually by graduate students in educational psychology from Cal-State, Hayward. All tests were scored by the project staff.

3.3 Lessons

Teachers gave the tape-recorded lessons on the average of twice a week in their classrooms, using reel-to-reel tape recorders. In the second grade classrooms all children took the lessons at the same time, free field. In the learning disability groups they worked in very small groups and could take the lessons over again until they achieved mastery. In some clinics earphones were used. Interim Review Tests, also tape-recorded, were given by the project technical assistant. All lessons and tests were scored by the project staff. Except in the learning disability groups, teachers administered the program with a minimum of intervention and with no supplementary activities, in order to determine the efficacy of the tape-recorded program by itself. All lessons were corrected and scored by the project staff.

3.4 Teacher inservice

Five one-day workshops and several one-half day sessions were held with teachers and administrators for orientation, monitoring, evaluation, and planning.

4.0 Typical day's or week's schedule of activities.

Children received the tape-recorded lessons on an average of twice a week. Each class had its own schedule, but the lessons for any given class were given at the same time on the same days.

5.0 How were pupils grouped?

In Group A there were no special groupings of the children. All took the lessons and tests at the same time and in the same way; if they were absent, they were allowed to make up the lessons or tests individually.

In Group B, students worked closely with a learning disability clinician, usually in groups of two to six.

6.0 Teacher-pupil ratios.

In Group A the teacher-pupil ratio averaged 1 to 30. In Group B the average was 1 to 4.

7.0 How did pupils receive feedback on their individual daily progress?

Pupils received feedback on progress on each lesson through procedures built in to the tape recordings. On each page of the response booklets the responses were made the first time in blue. The tape-recorded narrator then gave the stimuli a second time and in many cases described the reasons for the choices made, and students checked their answers in red. All response booklets consisted of rows of pictures which provided multiple choice answers to the different perceptual tasks, and the children made responses by marking the appropriate picture with an X, a circle, or a line under the picture. Feedback then consisted of the visual match of the red and blue marks.

8.0 How did parents receive feedback on their child's progress?

No feedback was given to the parents, since the field test for this year was designed to provide structured learning experiences with a minimum of intervention or encouragement from teachers or parents.

9.0 Amounts and kinds of practice, review, and quiz activities provided.

The lessons themselves contained enough items for practice and mastery of the different perceptual tasks. Reviews were provided through the four Interim Review Tests, which contained samples of the activities that had been performed in the previous lessons of each set.

10.0 Special provisions for motivating pupils.

Motivation was built in to the tape recordings through (1) the use of different voices; (2) the character of Sirkee the clown, who acted as a principal narrator and who related many of the activities to daily experiences of students; and (3) the novelty of most of the tasks themselves. Narrators talked very directly to the students and overt verbal responses were often elicited. The colorful and well designed listening books were also motivating. The project director visited all the classes, explained the purpose of the field testing, and asked for feedback from the children on how the materials could be made more interesting and effective for other boys and girls.

11.0 Comparison group activities differences.

Control groups were used for both A and B students. The control groups received only the pre- and posttests and no special listening training. Alternate listening experiences had been built in to the original design, but this feature had to be omitted because of lack of funds.

Dissemination

Disscuss how project information was disseminated during the past budget period.

1. Provide an estimate of the number of unsolicited requests for information from both within and outside the project area.
2. List the number of visitors from outside the project area.
3. Provide the cost of dissemination during the last budget period.
4. Provide the total cost of dissemination including prior budget periods (if possible).

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1. Estimate of the number of unsolicited requests for information from both within and outside the project area.

The number of unsolicited requests for information from inside the project area was 17, and from outside the project area was 14.

2. List the number of visitors from outside the project area.

There were 9 visitors to the project from outside the project area.

3. Cost of dissemination.

There were no direct costs for dissemination this year. Nearly 200 slides of the project were taken and several slide presentations developed, but the cost was borne by the Alameda County School Department Curriculum Materials Center.

4. Total cost of dissemination, including prior budget periods.

There have been no costs for dissemination in previous budget periods.

No particular efforts were made to disseminate information about the project within Alameda County, aside from news stories in the Superintendent's Bulletin, a monthly publication which goes to all credentialed persons in the county. This was mainly because there is such a dearth of auditory perceptual training materials, that teachers hearing about APT want to use them before they are adequately tested. Special reports were made to the Alameda County Board of Education, the Curriculum Division of the Alameda County School Department, and teachers and administrators who participated in the first year of the project. A slide presentation was developed for these presentations. Teachers from two of the project schools have made brief presentations to their faculties at district workshops, and another teacher gave a presentation at a meeting of a professional organization of primary grade teachers.

The director also wrote a paper, "Components of Listening Ability: An Analysis of Auditory Skills," based on the factor analysis of the pretest battery from 1970-71. The co-author was Dr. Thomas E. Whalen, assistant professor in educational psychology, California State University, Hayward, who was the evaluation consultant for the project. The paper was delivered at the California Educational Research Association meeting in November 1971, and is being submitted to professional journals for publication.

The director also described the project at a Preconvention Institute of the International Reading Association in May 1972. This was at no cost to Title III.

SUMMATIVE EVALUATION REPORT

for

Reading Improvement through Auditory Perceptual Training

ESEA Title III

by

Thomas E. Whalen, Ph.D.

Evaluation Consultant

EVALUATION

Choosing Participants

1. How were the children and the adults in the program chosen?

Two groups of children took part in the APT project. Group A consisted of second grade children from six elementary schools in Alameda County. These children were selected after meetings and discussions with members of an advisory committee on selection, which consisted mainly of administrators from the various school districts. Criteria to be used for selection were promulgated by the project director as follows: (1) classrooms should contain a majority of children reading below grade level, and (2) the population should be diverse from an academic, social class, and ethnic standpoint. A practical consideration was that classes must be selected only from schools in which two second grades of comparable ability were located in order to provide for comparability of experimental and control samples.

Group B children consisted of 80 students in grades three through six in the Fremont School District. Thes children, who had been assigned to Learning Disability Clinics based upon previous diagnosis, were selected for participation in the APT project by the LDG clinicians. Twenty students were selected by each of four clinicians using the criterion that the students be retarded at least two years in reading ability as measured by the Gilmore Oral Accuracy Subtest.

The teachers of students in both groups A and B volunteered to participate in the project.

2. How was a comparison group chosen?

The control samples for Groups A and B were selected in slightly different manners. For Group A, as indicated above, a decision was reached conjointly by the project director and the advisory committee as to which schools should participate in the project. Once this decision was reached, the designation of experimental and control classes within the schools was to be made on a random basis, allowing for the principle of randomization to correct for any initial differences between the classes. Ideally, this procedure should have produced statistically comparable X and C classes. However, in reality, this was not the case. Although the project director clearly specified the necessity for equivalent groups and the criteria for assignment of classrooms to groups, these criteria were not uniformly applied by administrators and teachers within the schools. Since classrooms were selected before the beginning of the school year, it was possible for principals and teachers to assign children into classes with the knowledge that the child would receive special project treatment or not. Apparently, the natural altruistic philosophy of many school personnel clouded their judgments with regard to the assignment of students. Thus, students who were felt to need the treatment were assigned in greater numbers to the experimental classes. This situation is reflected in the pretest data (shown in the appendix) which indicated that on several important measures the control group children performed significantly higher than the project children.

In Group B, decisions concerning the assignment of children to the comparison group were made by the LDG clinicians independently. Of the twenty children selected by each clinician, ten were assigned as control pupils on the basis of their age, sex, and standardized test information. Once again the project director pointed out clearly the need for carefully matched groups. However, as with Group A, decisions were not made on the basis of empirical evidence alone. The pretest results also indicated that Group B control children were significantly more advanced in several of the skills tested.

3. Were participants in the program involved in other programs?

The children were not involved in any other experimental programs. All students, of course, received related instruction in the language arts curriculum.

4. How many children left the program?

Pretest data were gathered on a total of 291 children in Group A. This number was reduced through attrition to 255 students for whom post test data were available.

In Group B pretests were administered to 76 students, of whom 66 were post tested at the conclusion of the program.

5. Which participants left?

Most of the attrition was due to pupil mobility, i.e., moving out of the school district. Some of the attrition was due to absence of the child at the time of post testing. No systematic attempt was made to determine the characteristics of students who left the program since the assumption was made that variables affecting pre-post differences due to attrition would be randomized across experimental and control groups.

6. Were participants added to the program to replace dropouts?

Pupils who entered project classrooms were allowed to cycle into the APT program since the lessons were given on a total-class basis. However, for purposes of data analysis, their test scores were not used.

7. Were there many participants who did not receive the program often because of poor attendance?

Attendance data were collected on all students in terms of the number of project lessons missed. The mean number of lessons missed for all students was only two lessons. Naturally, this variable was characterized by a skewed distribution with a small proportion of students missing considerably more than two lessons. Attendance rates were not considered to depart from normal class attendance, however, and this was not considered to be a problem for the project.

8. Did participants attend voluntarily?

Project schools and teachers volunteered. Project pupils did not volunteer since the program was an integral part of the class curriculum.

9. Was the evaluation group only a portion of the program group?

With the exception of a few students who came into the project after it started, all participants were used in the overall evaluation.

Describing Participants

1. Which participants received the program?

Those participants designated as the experimental samples in Groups A and B received the program.

2. How many participants received the program?

In Group A, six second grade classrooms totaling 152 children were administered the APT materials. There were thirty-nine Group B children in four learning disability clinics who received the program.

3. What are the ages and grade levels of pupils in the program?

In Group A, ages ranged from 81 to 111 months. Most students were from 84 to 90 months of age (seven to seven and one-half years of age) at the start of the program. The mean age for students in the experimental sample was 90.53 months. Control group students had a mean age of 90.12 months at the start of the project. All of these pupils attended the second grade.

Group B students ranged in age from 83 to 145 months (six years and eleven months to twelve years and one month). They were spread fairly evenly across these age levels. The mean ages for the X and C groups, respectively, were 114.85 and 118.35 at the start of the project. These pupils were considered to be third through sixth graders.

Note: See Appendix A for a more detailed description of the target population.

4. Did the program serve many more boys than girls, or vice versa?

In Group A, the second grade group, there were 85 boys and 67 girls in the experimental sample. The comparison group contained 70 boys and 69 girls. The learning disability group contained 25 boys and 14 girls in the target sample, and 30 boys and 7 girls in the control sample. As is evident from these latter figures, considerably more boys than girls were present in the LDG classes.

Note: See Appendix A for a more detailed description of the target population.

5. What achievement scores were available before the program with which to describe the program group?

For the second grade sample, because the classes were not constituted prior to the designation of experimental and control classes within project schools, no data were accessible on individual students before the project started. Data were gathered on several important variables at the beginning of the 1971-72 academic year. These included ethnic group membership, language dialect, socioeconomic background, and age. These measures were used along with other standardized and objectives-based test scores for descriptive and comparative purposes.

Pupils in the LDG sample had various standardized achievement and aptitude scores on record depending on their age and grade standing. These measures were used to identify them initially as LDG students and ultimately for inclusion into the APT project.

Note: See Appendix A for more detailed descriptions of the target population and for comparisons between experimental and control groups.

6. Are there other special characteristics you should mention in describing the program group?

An Index of Social Position (Hollingshead, 1957)[1] was used to determine the socioeconomic level of the target population. Information was gathered through a written questionnaire sent to parents of all children in the sample. The index combines level of education with type of occupation in two weighted scales. Scores range on a continuum from a low of 11 (highest ISP) to a high of 77 (lowest ISP). The mean index scores for the experimental and control groups in the second grade sample were 48.46 and 47.55, respectively, indicating no appreciable difference in the groups. In the LDG samples the X and C means were 42.68 and 47.08, respectively, indicating a slightly higher social status for the experimental pupils.

One feature which differed across X and C samples in the second grade group was language dialect. Although the vast majority of students were speakers of standard English, there was a disproportionate number of pupils in the experimental group who spoke Black English, twenty versus three students in the control group.

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[1] Hollingshead, August B. Two Factor Index of Social Position. 1957. 1965 Yale Station, New Haven, Connecticut.

Measuring Change

1. What measures were applied to find out whether the program's aims were achieved?

The following standardized tests were used to measure broad objectives of the program:

1. Gilmore Oral Reading Test: accuracy, comprehension, and rate subtests.
2. Short Form Test of Academic Achievement: vocabulary, analogies, sequences, and memory subtests.
3. Lindamood Auditory Conceptualization test.

The following objectives-based tests were administered:

1. Composite Auditory Perceptual Test: competing messages subtests (4), and auditory discrimination subtests (3).
2. Interim Review Tests (4): competing messages and auditory discrimination subtests.

In addition, data were collected to assess student listening ability via a 7-point teacher rating scale.

Note: See Table 1 for a more detailed description of the tests.

2. How were the measures matched to the objectives?

The overall objectives of the project as stated in the Continuation Application for 1971-72 were as follows:

"The following student performance objectives will be met for both groups (A and B):

"a. At the completion of the APT program, the treatment group will show a statistically significant mean gain in reading comprehension, as measured by the Gilmore Oral Reading test, over the mean gain of a control group ($p \leq .05$).

"b. At the completion of the APT program, the treatment group will show a statistically significant gain in listening performance, as measured by the criterion-referenced Composite Auditory Perceptual Test (CAPT), over the mean gain of a control group ($p \leq .05$).

"c. At the completion of the APT program, the treatment group will perform significantly better on a standardized information-processing test (Token Test) than a control group ($p \leq .05$)

"d. Eighty percent (80 percent) of the S's in Group A and sixty percent (60 percent) of the S's in Group B will meet the criteria for performance on the four Interim Review Tests (IRT)."

Since the objectives were stated operationally in terms of the test used, a clear relationship is evident between objectives and tests. One departure was made from the set of objectives listed above. The Token Test was deemed inappropriate by the project consultants and was replaced by the Lindamood Test of Auditory Conceptualization for purposes of measuring information processing.

3. How were the measures matched to pupils' capabilities?

Based upon experience gained during the first year of the project, the director was able to select instruments tailored to students' achievement capabilities. The Gilmore Oral Reading Test includes a wide range of reading levels inclusive of grades 1 through 9. It was ideally suited to group A, the second grade sample, with very few exceptions. There were a few students who scored at the bottom of the scale on the pretest. All but one of these made measurable gains on the post test. In group B, all but one of the students fell within normal ranges on the subtests. In general, this test is considered to be an excellent choice in terms of measuring the project objectives and for providing data which could be compared across the two separate groups.

The Lindamood test is equally robust in its range of abilities. It has norms for grades K through 12. All students scored within suitable ranges on this test.

The Composite Auditory Perceptual Test (CAPT) and the Interim Review Tests (IRT's) were designed by the curriculum consultants to measure the specific behavioral objectives of the APT lessons. In general, the tests were quite successful in this regard. Two problems became apparent early in the year, however. On the CAPT pretest, many students were unable to make appropriate procedural responses. That is, even though they knew the correct answer to an item, they marked the response incorrectly (by circling the item instead of underlining it, for example). Thus, in scoring the test two sets of scores had to be used--one which included marking errors and one which did not. This condition caused considerable difficulty in scoring the test and made for a lack of precision in the instrument. Another problem which was partially anticipated concerned the difficulty levels of the lessons and IRT's. Because the teachers were not allowed to intervene in the learning experience provided via tape recordings, the lack of feedback to the students caused some of them to have extra difficulty with lessons and IRT's. This was especially true during the fourth sequence of lessons, and consequently many students did not reach criterion levels on the 4th IRT.

4. Were observers specially trained?

All test administrators were trained prior to giving tests. The pre- and post-CAPTS and IRT's were administered by a well-qualified, full-time assistant to the director. The Gilmore pretests were given by a group of graduate students from California State University, Hayward. These students were trained by the research assistant in the use and scoring of the reading tests. Their level of expertise was also verified by the evaluation consultant prior to testing dates. One of the above graduate students contracted to administer the post tests.

5. How much time elapsed between testings?

Pretests were administered in October. Post tests were given in May. The four Interim Review Tests were given at intervals of four to six weeks.

Presenting Data

1. What data were obtained from the measures applied?

The appendix contains several tables summarizing the data collected. Table 2 is a description of the target population. Table 3 shows baseline data and initial differences between the X and C groups. Tables 4 and 5 show pre-post achievement growth for experimental groups A and B, respectively. Tables 6 and 7 present summary statistics of yearly growth for all subgroups and experimental-control comparisons for groups A and B, respectively.

2. What measures of central tendency were used?

In all cases, where interval data were involved, arithmetic means were used for measures of central tendency. For those variables involving categorical data such as sex, ethnic group membership, and language dialect, simple frequency counts were used for comparisons across subgroups.

3. What measures of dispersion were used?

Standard deviations were used as measures of dispersion in all cases.

4. What are the overall results of the analyses, i.e., was the program effective?

Based upon data shown in Tables 4 to 7 in the appendix, it is difficult to show positive results for the APT curriculum. Only one subtest showed significant gains for both A and B experimental groups over their comparison groups. This was the first competing messages subtest, which measured recognition of spondee words under conditions of varying signal-to-distraction ratios. Moreover, some tests actually showed greater gains over the year for the control groups than for the project pupils.

However, because of the fact that X and C groups were not equivalent initially, it is extremely difficult to draw definite conclusions from the data. The analysis of covariance, which takes into account initial differences between the groups to some extent, did reflect some slight changes in outcomes, but these shifts were not great enough to claim significant gains in favor of project pupils.

In addition, several intervening variables combined during the course of the project to cast further doubt on the results obtained from the post test data. For example, it was found that a small, but significant number of project pupils had fairly large decrements in performance over the year. This was not true to the same extent in the comparison groups. Thus, group means were lowered considerably in the experimental groups by a few extremely low scores. This could have resulted from the fact that these slower learners received no feedback or intervention from their teachers and consequently suffered morale and motivational effects resulting in apparent decrements in performance. The frequent testing of project pupils could also have affected these students adversely.

Another anomaly which arose upon inspection of post test data was the fact that project students made significantly more marking errors on the post test despite the fact that they had been trained to respond correctly during the entire sequence of lessons. There appears to be some unknown factor at work which served to divert project students from appropriate marking procedures to a total cognitive involvement in the substance of the lessons.

Finally, an error was made in post testing procedures which could have affected scores in the experimental sample. In two classrooms, baffles were used to prevent students from copying. This procedure was not used in any of the control group classes.

An analysis of the validity and reliability of the CAPT as an instrument for testing auditory perception showed that it possesses fairly acceptable characteristics as a criterion referenced test. The overall test-retest reliability was a .66 over a seven month period. Table 8 shows reliability coefficients for the AD and CM subtests, as well. The test is also significantly related to other measures of language ability such as the SFTAA and Gilmore tests. An independent study of the instrument on children in grades one through three also showed that (1) performance on the CAPT improved with grade level increments and with increase in age, (2) those subjects deemed to be highly competent readers by their teachers tended to do better on the CAPT than those who were rated as medium or low readers, (3) there were no significant differences found between performances of boys and girls, and (4) a moderate relationship existed between CAPT performance and socioeconomic status of the children. Once the scoring procedures are remedied, the test should serve as a useful diagnostic instrument.

In conclusion, the APT project appears to be making significant progress toward unveiling some hitherto unknown dimensions of auditory processing in young children. It is also having some degree of success in developing a curriculum to teach these newly identified skills. But if the APT package is to be accepted for dissemination to other school districts upon the completion of next year's program, it will be imperative to know beyond a doubt if the lessons are indeed producing measurable gains in listening achievement. Thus, it is recommended that this year's design be replicated next year for a small, carefully selected and controlled sample of pupils in order to reach a final decision regarding the merit of the lessons.

Analyzing Data

1. What analyses were undertaken of the data?

Comparisons were made between experimental and control groups on all descriptive variables including sex, age, ethnic group membership, language dialect, and social class. Comparisons were also made on all pre- and post test achievement variables such as the teacher ratings of students listening ability, the Gilmore Oral Reading Test, the CAPT, SFTAA, and Lindamood Tests. Independent t-tests were used for all of the achievement comparisons; means and frequency counts were calculated for the descriptive measures. Additional comparisons were made between pre- and post test scores within the experimental and control groups. A correlated t-model was used for this analysis.

The following additional analyses were carried out:

1. Determination of any ordering effect due to the different testing sequence for AD and CM subtests of the CAPT. See Table 9.
2. Determination of relationships between pretest variables and sociological factors, and among the various subtests. See Tables 10 and 11.
3. Determination of principal parameters of auditory perception for purposes of revising and/or shortening the CAPT.[1]
4. Standardization of pretest scores for purposes of placing students within their norm groups and for constructing individual profiles of student achievement.
5. Calculation of correlation matrix for pretest CAPT scores, IRT's, and post test scores. See Table 12.
6. Determination of the test-retest reliability of the CAPT: AD and CM subsections and total score. See Table 8.
7. Regression analysis followed by a factorial analysis of variance on two dependent variables, Gilmore Oral Reading Test and CAPT total scores, using pretest scores and initial language ability as covariates.
8. Calculation of standard scores on all pre- and post test variables for purposes of charting student growth profiles.

In addition, the project director monitored lesson-by-lesson growth for a stratified subsample of Group A and Group B students to determine the effects of the program on students at various levels of initial reading and listening ability. Also, a graduate student from Cal-State, Hayward, under the dual supervision of the director and evaluator, administered the CAPT to a separate sample of children in grades 1 to 3 for purposes of norming the instrument and to check results with those of project testing.

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[1] See section titled "Factor Analysis," page 33.

2. What was the basis for judging the progress of the program group?

Raw score and grade equivalency scores were analyzed to determine growth from pre- to post tests within the program group. These same measures were used to compare growth rates of the program and control samples.

3. What comparisons were drawn for subsamples?

Comparisons were made for all test scores between the experimental and control samples in both A and B groups. Also, within Group A, the experimental group was subdivided into good and poor readers and listeners in order to determine any interactive effects of the program on students.

4. What evidence is there that those who attended more gained more from the program?

Data were collected on the number of lessons and Interim Review Tests missed by each student. These data were correlated with post test achievement scores to determine relationships. Among the second grade sample the average pupil missed only two lessons, though a small number of students missed considerably more than this mean figure. On the whole, one student in three missed one of the Interim Review Tests.

Evidence indicates a significant negative relationship between absence and listening achievement as measured by the CAPT. A coefficient of -.31 was computed for this relationship. Since the relationship between absence and reading achievement was near zero, it can be inferred that students who attended more lessons did benefit to a greater extent than their absent peers from the listening exercises.

FACTOR ANALYSIS

In order to determine the principal parameters of auditory perception, so that the CAPT could be revised and/or shortened for future use, a factor analysis was done on the pretest battery. Pretest data gathered from 290 second graders in both the experimental and control groups were subjected to a principal components factor analysis followed by Kaiser's varimax rotation. The data included scores on 15 separate variables: a teacher rating of the child's listening ability; accuracy, comprehension, and rate scores from the Gilmore Oral Reading Test; four competing messages (CM) scores and three auditory discrimination (AD) scores from the Composite Auditory Perceptual Test (CAPT), and four subtest scores from the Short Form Test of Academic Achievement (SFTAA). Table 1 contains a numbered list of the variables with a brief description for each.

Three separate analyses were made. On the first run, only those factors with eigenvalues greater than one were retained and rotated. The results of this analysis are shown in Table 13. The first factor in this model was identified as a reading factor because all of the Gilmore subtests were included with very high loadings. Variable 1, the teacher rating of student listening ability, also correlated moderately with this factor, indicating that teachers apparently rated the student's reading ability instead of his listening ability. This could have happened because of a general halo effect, or because the teacher's perception of listening ability was not in accord with the specific skills of listening defined and measured by other project tests.

Factor II contained high loadings for all of the competing message subtests (variables 5 through 8). Because of the nature of these subtests, this factor was identified as a resistance-to-distraction or figure-ground factor. The existence of this factor lends further support to the validity of the CAPT as a multidimensional listening test.

Factor III was the most difficult to interpret due to the large number of heterogeneous variables which loaded on it. All of the AD subtests had moderate loadings, and both the verbal and non-verbal SFTAA subtests had high loadings on this factor. Because of the lack of purity of this factor, a decision was made to make a second analysis by rotating four factors with the expectation that some of the subtests in Factor III would break off and form a fourth factor.

Table 14 shows the results of the 4-factor model. As expected, Factors I and II remained stable, but two of the SFTAA subtests broke off to form a fourth factor. This factor included the analogies and sequences subtests of the SFTAA, both non-verbal scales, and a moderate loading for variable 10, the second AD subtest. Thus, Factor IV could now be identified as a non-language dimension within the pretest battery.

Factor III, in the 4-factor model, now contained moderate-to-high loadings for two of the three AD subtests and for two of the language subtests of the SFTAA. Therefore, this factor was determined to be a linguistic and phonological dimension of the battery.

A final analysis was made in which five factors were rotated. The subsequent pattern of loadings, shown in Table 15, indicated that only one variable, the third AD subtest, loaded at all on Factor V. The other AD subtests remained split across Factors I, II, and IV. From this analysis, it was concluded that the AD subtests of the CAPT lack a central focus of measurement. Whereas all of the CM subtests cluster as one factor with relatively high loadings, the AD variables are split across reading, phonological-linguistic, and non-language factors.

In summary, three separate factor analyses were performed on data gathered on fifteen pretest scales. After analyzing the loadings for the 3-, 4-, and 5-factor paradigms, the 4-factor model emerged as the most plausible empirical representation of the test battery. The four factors were identified as (1) reading, (2) resistance-to-distraction, (3) linguistic-phonological, and (4) non-language. These four factors accounted for approximately sixty-three percent of the total variance in the test scores.

Summary of Four-Factor Model of Auditory Perception

Factor I	Factor II	Factor III	Factor IV
Teacher rating of student listening ability	Competing messages	Auditory discrimination	Nonverbal analogies
Oral reading accuracy		Recognition of linguistic forms	Nonverbal sequences
Oral reading comprehension		Vocabulary	
Oral reading rate		Delayed memory	
Auditory closure			
Auditory synthesis			

PROCESS EVALUATION REPORT

READING IMPROVEMENT THROUGH AUDITORY PERCEPTUAL TRAINING

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Procedural Objectives and Findings

1. What were the procedural objectives of the program?

Procedural objective 1.0	To provide management capability for the project.
Procedural objective 2.0	To complete the project evaluation for fiscal year 1970-71 with reference to the effectiveness of both product and process.
Procedural objective 3.0	To develop and produce revised instructional materials to be used in the field test phase during the second year of the project.
Procedural objective 4.0	To conduct field testing of revised A. P. T. materials for both treatment and control groups.
Procedural objective 5.0	To conduct a feasibility study of the use of rate controlled (compressed) speech for improved listening and reading rate and comprehension.
Procedural objective 6.0	To conduct a process evaluation of the project activities.
Procedural objective 7.0	To conduct a product evaluation of the project.

Procedural objective 8.0	To provide for dissemination of project results.

2. State the findings in ordinary language for each objective.

   1.0 To provide management capability for the project.

   A. Evaluation Activities

      1. The evaluators interviewed the Project Director, her technical assistant, the materials illustrator and a sample of teachers in the project.

      2. The evaluators examined management techniques used in the project including:

         a. The memos and reports of the staff to outside consultants, to school administrators and to project teachers;

         b. Worksheets, schedules and decision summary forms developed by the Director with consultant assistance from the evaluators;

         c. Financial and activities schedules;

         d. Activities at orientation, inservice training and dissemination meetings.

      3. The evaluators compared activities, results and timetables with project activities.

   B. Evaluation Results

      1. The evaluators noted three major management difficulties which would have to be at least partially solved to provide an effective management capability for this project:

         a. The variety of activities (revising scripts, workbooks and tapes; producing tapes and printing workbooks; communicating with consultants located at various West Coast locations; coordinating schedules; planning and implementing field testing in several county school districts; monitoring classes and communicating with project teachers; directing project staff activities and providing general financial management) made unusual demands on the Project Director's time that placed a premium upon effective scheduling of her work and upon coordination and follow-through with her small staff.

b. The Project Director is a leading expert in auditory perception. Both her interests and the need to save money in the project projected her into ongoing production, monitoring and classroom involvement which took time away from broader, effective management activities.

c. As noted in the interim report, the project continued to be underfunded. The need to cut activities, reorder priorities and juggle budgets was a time consuming effort eating away at time that could be spent in more productive and positive management. It also threatened effective completion of project activities.

2. The Project Director consulted with the evaluators and formulated several methods for effective scheduling of her time and the time of her staff.

   a. The Director and the technical assistant adopted a decision summary form (developed with the assistance of the evaluators). The form was used for both individual and group decisions. It provided a convenient way of writing down a problem together with its solution. It also provided a method for follow-up by indicating criteria to be used, date of accomplishment for various tasks and staff member assigned responsibility for each task. The Director was enthusiastic about the form and used it faithfully. It improved the Director's management performance by more effectively scheduling time and by assuring completion and follow-up of management decisions.

   b. The technical assistant, as noted in the interim report, was a competent professional who was personally well organized. She lifted many routine tasks from the Director's shoulders. The Director recognized this and used her to monitor school activities, to evaluate workbook and test effectiveness and to coordinate many project activities. In doing this, the Director assured more control and follow-up of project activities than in the previous year. The Director was also given more time for broader management activities without losing contact with the day-to-day project activities.

c. In the early weeks of the project, the Director personally handled the complex task of coordinating the work of the consultants in revising tapes and workbooks. The difficulty of coordinating work at various locations among a group of diverse professional people required the Director's time. She recognized this and devoted most of her time to these problems during the early weeks. The evaluators were impressed with her pacing of her time, her continuing follow-up and communication, and her ability to handle the myriad details involved in these major production tasks. She still involved herself personally too much in these activities (as noted below) but generally she was effective. The most specific indication of her effectiveness was the completion on time of all revisions of workbooks, tests and tapes to meet very high performance criteria.

d. One measure of effective scheduling of staff time can be derived from classroom teacher perception of project management. The evaluators attended project teacher meetings, visited project schools and evaluated results from a pre-post questionnaire given to teachers.

    1. In interviews most teachers in both classrooms and learning disability clinics felt the Project Director and the technical assistant were available and helpful. The teachers were able to reach the project staff and they received visits from the staff. They felt their suggestions were being taken seriously. (The evaluators agree that this was the case. We examined

many notes taken by the staff on oral teacher comments and from teacher comments made on returned student booklets. These were discussed and some have been incorporated into next year's work.)

2. Some teachers noted a lack of inservice training, but this was to be expected since almost none was given this year to assure that children learned from self-pacing materials rather than from teachers.

3. The pre-post questionnaire given to the teachers gives some insight into management effectiveness. If the teachers agreed in understanding project objectives, if they agreed that the project provided new approaches to teaching and if they generally rated the project as successful, it should indicate that not only were the techniques and materials successful, but also that the project's management was effective. The results from the questionnaire appear in Table I.

TABLE I

Pre-Post Teacher Questionnaires

Question	Pre			Post		
	Regular Classroom	Learning Disability Clinic	Total	Regular Classroom	Learning Disability Clinic	Total
	N = 7	N = 8	N = 15	N = 6	N = 8	N = 14
1. What were project objectives?						
a. Improve concentration	0	0	0	2	0	2
b. Improve listening skills	7	0	7	8	0	8
c. Improve reading	1	0	1	1	0	1
d. Improve reading through auditory perception	0	8	8	0	8	8
e. Teach sound discrimination	1	0	1	3	0	3
2. Describe teaching method						
a. Tapes and workbooks	3	4	7	4	7	11
b. Listening and doing	3	0	3	2	0	2
c. Don't know	1	0	1	0	0	0
3. Objective/methods different from those usual in language development classes?						
Yes	1	2	3	2	4	6
No	5	6	11	4	2	6
No Answer	1	2	3	0	0	0
Methods only different	0	0	0	0	3	3
a. Stress listening skills over language skills	2	1	3	1	0	1
b. Prepared materials	0	0	0	0	1	1
c. Emphasis on sequence	0	0	0	0	1	1

TABLE I (cont'd.)

Question	Pre			Post		
	Regular Classroom	Learning Disability Clinic	Total	Regular Classroom	Learning Disability Clinic	Total
d. Self pacing	1	1	2	0	2	2
e. Organized apprach	0	0	0	0	1	1
4. Were you in program last year?						
Yes	1	1	2	2	1	3
No	5	6	11	4	6	10
No Answer	1	1	2	0	1	1
5. Rate inservice training						
Low 1	0	0	0	0	1	1
2	0	0	0	1	0	1
3	2	2	4	0	0	0
4	3	2	5	2	4	6
High 5	1	4	5	3	2	5
6. Rate Program Direction						
Low 1	0	0	0	0	0	0
2	0	0	0	1	0	1
3	3	0	3	0	0	0
4	1	1	2	2	3	5
High 5	2	7	9	3	5	8

The evaluators drew the following conclusions with regard to project management from this table:

a. The project staff was successful in communicating the basic listening objective of the project to the classroom teachers and to the teachers of learning disability clinics. However, the fusion of auditory perception with its impact on improving reading was communicated strongly only to the teachers of the learning disability clinics. These latter, of course, are especially aware of reading problems because of the nature of their remedial work. The figures suggest that better communication of objectives with regular classroom teachers would be beneficial.

b. The teachers in both groups clearly understood the emphasis was not on teacher directed work, but rather on a combination student use of tapes and workbooks. Several classroom teachers emphasized the "learning by doing" method in the pre questionnaire. Communication of this method of teaching was crucial to project success. In this respect the management and communication process was notably successful.

c. The evaluators are puzzled that so many teachers in both classrooms and learning disability clinics felt the objectives/methods used were similar to those used in language development classes. This is particularly puzzling since some teachers went on to indicate differences in detail. We believe the fault is in the phrasing of the question. Three learning disability clinic specialists indicated in the post questionnaire that the objectives were similar, but that the methods were different. The objectives of most educational programs at the primary grades is to teach basic skills. This program is no different in that respect. But the method, through auditory perception, is different and that difference was caught by some of the teachers most involved in special programs for remedial work. In the sense that many of the teachers could not make the distinction, project management was not successful in a basic communication task.

This failure is further exemplified by the comments of the teachers. They really could not agree on the way in which objectives or methods were different from those normally used.

d. Most teachers were not in the project last year. Their pre-post assessments of inservice training (really communication since no formal inservice training was given) and management was quite pure. Communication generally improved during the year with all teachers giving a rating of 4 or 5 by year's end. Program direction or management was generally regarded as effective at the beginning of the year and even more so by the end of the year. There is, however, some evidence that while learning disability clinic teachers regarded program direction as effective in both questionnaires, they were a bit less enthusiastic in the post test. The evaluators suggest that learning disability clinics are especially sensitive to the need for helping children with basic skill problems. They may have entered the program with elevated expectations of the project, its materials and its inservice training. By the end of the year, while generally favorable, they were not quite as euphoric in their expectations.

e. The project continued to be underfunded. The evaluators believe this hampered many of the efforts made to improve program management. The staff was too small and both the Project Director and the technical assistant were required to take care of many small details. This took away from effective planning time.

The evaluators observed the hours the Director had to spend in cutting expenditures and reorienting activities to meet budget restrictions. A major section of the program had to be deleted and many follow-up and evaluation procedures had to be dropped.

Despite this the Project Director was resourceful in using slender resources. Her use of volunteer time from consultants and her use of district and ad-advisory committee personnel indicates she tried to gain the maximum help possible with the minimum expenditure of funds.

3. From these data the evaluators conclude the Project Director was at least partially successful in better time scheduling and staff coordination and in involving herself less in project details and more in planning. Continuing efforts in these areas would be beneficial but they will be limited because the third difficulty--underfunding--remains a principal problem.

Given the limitations described, the improvement in project management is considerable. The view of the project teachers that management for the project was effective is the final and best source of evaluation since they experience the results of both good and bad management directly.

2.0 To complete the project evaluation for fiscal year 1970-71 with reference to the effectiveness of both product and process.

A. Evaluation Activities

1. The evaluators interviewed the Project Director, assisted in preparing the evaluation design for the Continuation Proposal, and reviewed the End of Budget Year Report.

B. Evaluation Results

1. The Project Director, with a very small staff, completed an evaluation of the fiscal year 1970-71 emphasizing product evaluation. She used consultants to help measure the impact of the first year upon the students in the project. This aspect of the evaluation was quite complete. It is not within the objectives of our evaluation to repeat the findings. Rather, the evaluators note that the Director engaged competent statistical help and produced a complete product report.

2. Some attempt at process evaluation was made by the Director. It is difficult to assess the effectiveness of one's own procedural activities. Recognizing this, the Project Director engaged Education/Research, Inc., to do an outside process evaluation for 1971-72.

3. The evaluators conclude that this procedural objective was met.

3.0 To develop and produce revised instructional materials to be used in the field test phase during the second year of the project.

A. Evaluation Activities

1. The evaluators interviewed the Project Director and her staff with regard to materials revision and production.

2. The evaluators reviewed decision summary forms, minutes of meetings, reports and letters dealing with the revision and production of instructional materials.

3. The evaluators compared illustrations, workbooks and scripts for tapes for the first and the second years of the project.

4. The evaluators compared activities with the objectives and time schedule of the project.

B. Evaluation Results

1. As noted above, the Project Director was especially conscientious and successful in coordinating the revision and production activities of the widely scattered consultant staff. Because the staff were widely scattered along the West Coast and because each consultant had a busy schedule of his own, joint meetings were held to a premium. Instead, the Project Director made several trips to the consultants and acted as a liaison between them. The voluminous correspondence and the heavy telephoning necessary for this coordination was an extraordinarily time consuming thing. However, it could not be helped and was the best way of seeing that the product was completed.

2. The evaluators were impressed with the flexibility of the Project Director in accepting and evaluating suggestions made by classroom teachers in last year's project and by the outside consultant. At the same time, her own expertise in the subject area came through in her own thorough suggestions. Sometimes, differences of opinion led to disagreements on revisions. When that happened the Project Director seemed to prevail.

3. The thoroughness of the revisions and the in-depth planning of the lessons also impressed the evaluators. The evaluators listened to discussions between the workbook illustrator and the Project Director on the minutest detail of illustration. If an illustration or a script was changed (and the

changes were extensive) it was typically generated by:

a. test results showing poor results in that area,

b. comments on the workbooks by project teachers,

c. observations of the Project Director on visiting classrooms,

d. suggestions from the consulting script writers and coordinators.

These were truly informed comments and indicate that the revisions were carefully planned to further the instructional objectives of the course.

4. The evaluators have been impressed with the professionally high standards set in both project years for materials production. The workbooks were worked over many times for clarity, interest and high quality. Each workbook is colored a different color. Many discussions, too, place a premium on choosing the right colors to create the appropriate mood and interst.

   The tapes were made to the highest distortion-free quality standards possible. This care extended to voices and quality of earphones and tape recorders in the school. Since most school recording equipment was not very high in quality, many distortions occurred despite the quality of the tapes.

5. The evaluators conclude that the procedural objective for the development and production of revised instructional materials was met efficiently, in conformance to the highest production standards, and in a way that assured improvement of the materials to meet weaknesses discovered in the project's first year.

4.0 To conduct field test of revised APT materials for both treatment and control groups.

A. Evaluation Activities

1. The evaluators interviewed the Project Director and her staff, some consultants and most of the regular classroom and the learning disability clinic teachers in the project.

2. The evaluators reviewed decision summary forms, minutes of meetings, reports and letters dealing with field testing.

3. The evaluators reviewed teacher comments on the field testing phase and the section of the pre-post questionnaire dealing with field testing.

B. Evaluation Results

1. The field testing was conducted according to schedule with two groups of project students and one group of control students. The target population consisted of two groups. In Group A there were 152 children in six second grade classrooms scattered throughout Alameda County. In Group B there were 39 children in four learning disability groups in the Fremont Unified School District. These children came from schools throughout the district and were enrolled in grades 2 through 6 in regular classrooms. All target children received special training in auditory perception with the revised instructional materials.

The control group consisted of two sections. One group included 139 second graders in various Alameda County schools. The other group included 37 students in grades 2 through 6 in learning disability groups. The children in the control groups were originally supposed to listen to stories on tapes on a regular schedule, but not receive special training in auditory perception. Due to funding restrictions, this feature of the program was cut. The control group received no listening instruction at all. Both experimental and control groups received pre-post testing in auditory perception skills, oral reading skills, and delayed memory.

2. The evaluators attended an orientation meeting for project teachers at the beginning of the year and an assessment meeting at the end of the year. The evaluators also read notes made by the Project Director and the technical assistant of numerous visits and phone conversations with the project teachers. The project staff was not to train the teachers in materials use since they wanted to limit teacher intervention and test materials only. However, the meetings and contacts were necessary to orient teachers to project objectives, to answer technical questions and problems and to assure the field testing was carried out adequately. In this respect the project staff contributed notably to the field testing.

3. The evaluators noted the considerable complexity of this kind of field testing. Some practical problems such as coordination, orientation, the physical distribution and collection of the instructional materials, the collection and assessment of feedback information from project teachers, on site monitoring and pre-post testing, were solved with dedication and imagination by the project staff.

   However, other problems could not be adequately solved and these will have to be taken into account by the product evaluator. These included:

   a. The control group appeared to be better educated with fewer skill problems. The group appears to have been selected from a socially and educationally different group of students than the target children. This was noted in the interim report and its effect on testing was noted by a testing consultant in May, 1972. This problem is discussed in greater detail in the evaluation of the procedural objective related to product evaluation.

b. The pre-post testing instruments were not as valid for the project as they could be. The Gilmore Reading Test (Form B) needed revision and updating. It needed, in the testing consultant's opinion, some modification of scoring methods. The Lindamood Auditory Conceptualization Test needed more specific instructions and a less redundant second section. Finally, the testing itself was so complete that combined with all the other school testing, it may have produced a kind of "test weariness" which may have affected the results. These testing problems will be discussed in greater detail by the product evaluator.

c. The evaluators in interviews and on site inspections concluded the teachers were varied in their use of the materials, in their enthusiasm and in their general approach to the project. While the majority of the teachers favored the project, they had received no inservice training and they developed their own interpretation of how much intervention they should use. Each classroom also presented a unique environment for teaching. Some had better tape recorders than others, some were quiet while others were on busy streets, etc. In an auditory perception program these differences were more important to program success than would be the case with other basic educational skills.

Some concept of the variability described above may be obtained from the evaluation staff's report of several on site visits. The observation report submitted by the process evaluators to the Project Director on April 18, 1972 is reproduced on the following pages.

April 18, 1972

AUDITORY PERCEPTUAL TRAINING

Site Observations

Observation #1

LDG Clinic -- Experimental Group
3/23/72

According to the teachers, auditory perceptual training at this school is done twice a week, thirty minutes each time. There are two groups of ten each, one experimental and one control. On the day of the observation, five children received the taped lesson, which was the first lesson in Set Four. The participating children ranged from the second through the sixth grades.

The class met in a separate room free from outside distractions. They seemed interested and ready to work. The teacher began the session in a relaxed, informal manner casually passing out the materials. The children were alerted that the tape would soon begin by the teacher's question: "Everyone have their listening ears on?" Occasionally, the teacher walked around the working students. This might have been a slight distraction.

The voice on the tape recorder asked a number of questions. Sometimes the children tried to respond, but couldn't because there wasn't enough time. Often they did react non-verbally to the voice on the tape, possibly tipping off other students as to the correct response. For the most part, they seemed concerned over making correct responses. This evaluator wondered if the tapes were not programming the children to accept correct responses as the only valuable data in the learning process. The use of the color red as the marker for checking responses might be additional reinforcement in this regard.

When the students finished, the teacher collected the books and the pencils. There was no discussion. The students proceeded to another room to begin other work. The teacher indicated that LDG second graders experience some real difficulty with sound discrimination and voice patterns. Since this was the initial observation, this evaluator took the next lesson (the teacher was previewing) to get a closer idea of the process the children actually experience. Of interest was page 2 (Thinking and Talking, 4.2). The problem concerned "has been wet, is wet, and will be wet." Both the teacher and myself were struck by the inconsistency between the words and the picture since "Circy" is using an umbrella to avoid getting wet. We both agreed that this item might need revision.

By and large, the teacher seemed pleased with the program, particularly since many time-consuming clerical tasks have been eliminated leaving only a largely administrative function.

Observation #2

LDG Clinic -- Experimental Group
4/4/72

Initially, the teachers were interviewed. They have nine students in their group, but they are scattered throughout four periods. Consequently, the students receive the tapes in groups of two, three, three, and one. According to one teacher, many of the students are using APT as "therapy." They frequently talk back to the tape recorder and many of the comments are quite hostile. The teacher remarked, "If Circy ever walked in, the kids would murder him." The teachers stated that APT is good for learning to read. Many supplemental activities would be necessary for APT to actually help in reading improvement. It occurred to this evaluator that the teachers might dislike the APT themselves, possibly transferring a negative attitude to the children.

Two girls took the taped lesson. About ten feet away, four boys were doing oral group work. This appeared to be a distraction as the teacher had to continually "shh" the boys so the girls could hear the tape. Both groups seemed to be losing in this situation. The lesson was on "when things happen." The teacher discussed the idea thoroughly with the students prior to beginning the tape (prepping?).

The teacher sat in front of the students, approximately two feet away from their desks. This was so close it, too, seemed a distraction. Frequently, the teacher stopped the tape recorder for discussion. Also, the speed was controlled so the children would have additional time to consider their responses. Finally, the teacher occasionally repeated a question. The extent of teacher support seemed too great, possibly creating a significant variable in the case of this class.

Observation #3

Second Grade -- Experimental Group
4/4/72

This class has 29 students. According to the teacher the children really enjoy the tapes. During the session, the ease in which the entire APT process was handled seems to corroborate this statement. The teacher stated that she has observed a positive carry-over from the APT to reading improvement "since it correlates with reading skill development." Also, the teacher thinks it is particularly valuable for learning to follow directions.

The class was quite relaxed and seemed to anticipate the lesson with pleasure. The teacher passed out the booklets and only said the following: a) "Put your names on the booklet"; b) "Watch your behavior so everyone can have the same chance." She quietly moved about the class during the lesson, only interrupting one time to prepare the class for a different marking technique on page 4 (Lesson #4.4). Some students did appear to tip off the others as to the correct response; others were watching their fellow students. (Is this class size manageable?)

Observation #4

Second Grade -- Experimental Group
4/6/72

There are twenty six students in this group. The lesson today is "Double Talking" (4.8). The teacher feels it is a particularly difficult lesson. The atmosphere in the class is quite informal and relaxed. After the class has settled, the teacher introduces the lesson by asking what the lesson is about. Students reply: "Double-Talking." She says that "Today's lesson is difficult." In this case, the teacher may be creating a self-fulfilling prophecy situation.

The class is particularly noisy during the tape. They vocally respond to the checking part of the tape with "yehs" and "boos". Again, the tapes may be reinforcing the "right answer syndrome." One student stops working apparently due to frustration. One child is reclining in a box on the floor. The box covers her right ear. She pulls a cushion next to her left ear. How can she hear?

In this lesson, it is particularly hard to distinguish the competing messages. This may be due to the fact that both voices are from males. Not only do the students have to distinguish a competing message, but they may also be having to discern between similar voice qualities. The competing messages is easier when one voice is male, one female.

Observation #5

Second Grade -- Experimental Group
4/6/72

This class has 28 students. Again, the lesson is "Double-Talking" (4.4). A number of problems occurred during this observation, although the time of day could be a problem, i. e., right after lunch.

According to the teacher the students are quite frustrated with the tapes. They are hard. She, too, feels that there is little carry-over to reading improvement. The competing messages "just help students to tune out classroom noise while they are reading." Frequently, the teacher has to interrupt and encourage although "we're not supposed to." Finally, she feels the tapes lack variety. They are too mechanical and repetitious she says.

During the session, the teacher refers to the tape as a "test." She corrects herself. When she introduces "Double-Talking", students are vocally negative. As with the class at ________, the students respond with "yehs" and "boos" during the checking part of the tape. Too, many are tipping off each other as to the correct response. One student is cheating. She puts the answer first, then the correct response. This is interesting because she knows that I know she is doing it. Could she be responding this way to get needed attention? On page 2, a student asks, "What's a patch?" One student is sliding back and forth in front of the tape recorder each time a question is asked, thus blocking the sound. Once again, the competing quality of voices (two males) appears to add to the inherent difficulty of the competing messages.

The teacher is very aware of the students' acting out behavior. She questions them. One student says they are misbehaving because a visitor is in the class. In fairness to the teacher, she's probably right. Also, there was an upsetting incident today during the lunch period so that this session is probably not representative of the class' usual performance.

These comments suggest the teachers are favorable to the program and trying hard to do a professional job of field testing in a classroom situation with a large number of variables at play. The on-site visits were completed during the use of Set IV of the materials. This is the only set in which students did not meet project criterion for growth. This failure may well have influenced other observed variables such as overt attention and interest.

4. The evaluators were impressed with the care given to reporting on individual student progress through interim review tests. Individual profiles on each target student were kept in the project office. The Project Director and the technical assistant painstakingly chartered each child's progress and conferred with teachers over any unusual changes in student progress. This care should be reflected in an unusually in depth product evaluation report.

5. The evaluators also noted the care with which teacher comments for each lesson were recorded and analyzed for possible future revisions of techniques or instructional materials. The technical assistant, for example, compiled a long summary of teacher comments with analytical comments from the Second, Third and part of the

Fourth Lesson Sets. Comments were made on pictures, lesson strands, sentences, voices on tapes, etc., which confused or upset students. Comments on student interest or lack of interest were noted. An example of the detail to which this analysis went is indicated in the following excerpt from the summary.

"Lesson 2.1, Page 1: Teacher comments: Many students did the opposite of what was asked on the tape recorder.

"Many of the students were copying from each other.

"Page 2: Easier to do; students could relate to topics. On number 8, students make faces at the sentences. (I don't like spinach). Row 9, many students smiled and said 'yes' (Would you like some chocolate ice cream?). Row 10, students mimicked the voice back.

"Dr. Witkin has a note, a question beside this, 'should we build this in on the tape?'

"Student comments: Page 2 seems to be the hardest. Some thought it was boring listening to the same thing, some thought it was fun. Some thought page 3 was either hard or fun or tricky."

The evaluators believe this care in analysis represents one of the best results of the field testing. It assures that the teachers' comments are adequately included in evaluation and in any revisions made next year.

6. The teachers gave a vote of confidence to the instructional materials both when introduced to the materials and at the end of the year. Almost all teachers in both experimental groups found

the materials and the tests developed for the materials to be effective (rated as a 4 or 5 on a five point rating scale with 1 as low and 5 as high).

7. The evaluators conclude that this procedural objective was completed adequately. The project staff conducted a complete and detailed field test. They recognized problems that arose and will try to assess results with those problems in mind. They have already worked on ways to overcome some of the problems in the future. Since teacher intervention will be allowed, they plan more inservice training and this should decrease teacher variability. Test modification and more careful selection of experimental and control groups will improve the field testing next year.

5.0 To conduct a feasibility study of the use of rate controlled (compressed) speech for improved listening and reading rate and comprehension.

A. Evaluation Result

1. This objective was deleted from the project with permission of the appropriate state educational agencies because the funding finally approved was less than requested. This required the cutting of some activities. The Project Director decided it was more important to complete the work on the materials developed in the project's first year than to drop some of that work and introduce new elements. The evaluators conclude the Director made the right decision.

6.0 To conduct a process evaluation of the project's activities.

A. Evaluation Activities

1. The evaluators reviewed the process evaluation activities in relation to the objectives and evaluation activities planned.

2. The evaluators interviewed the Project Director and reviewed correspondence between the Director and the evaluation team.

B. Evaluation Results

1. Most major evaluation activities that were planned were completed. These included:

   a. development of forms and a questionnaire

   b. periodic interviews with the Project Director and her staff

   c. interviews with project teachers

   d. comparative review of materials developed for the first and second years

e. review of all major correspondence, minutes of meetings and memos

f. review of teacher comments on lessons

g review and analysis of pre-post teacher questionnaires

h. on site visits to classrooms in the project

i. preparation of on-site visit report

j. preparation of interim process evaluation report

k. feedback to the Project Director

l. preparation of final process evaluation report

2. The evaluators were able to assist the Project Director in better project management through feedback and discussion on project activities and through development of a decision summary form.

3. The evaluators were able to develop a good picture of the effectiveness of the project's procedures through the unusually thorough documentation submitted by the Project Director and her staff.

4. The evaluators were unable to provide as much feedback as the Project Director would like or as indicated by the Servo-evaluation model presented in the Continuing Application. The budgetary restrictions were responsible for this failure. The evaluators continue to experience in many projects a failure to provide adequate funding for a complete and continuing evaluation. Within the limits of the budget, a surprisingly complete evaluation has been made. The evaluators donated some time and this helped to balance some budget problems. However,

the evaluators are very disturbed to note further budget restrictions in the overall project generally and in the evaluation activities specifically. The evaluation for the last year should be the most thorough of all three years. We suggest additional grant money for evaluation might be applied for through other agencies.

7.0 To conduct a product evaluation of the project.

A. Evaluation Activities

1. The evaluators interviewed the Project Director and her staff.

2. The evaluators reviewed correspondence, minutes of meetings, notes and reports relating to product evaluation.

B. Evaluation Results

1. As with process evaluation, this activity was underfunded. Within budget restrictions, the product evaluator is providing a remarkably complete statistical report. His access to computers and his willingness to give much of the resource necessary for a full statistical report is commendable. Again, next year, however, this aspect of evaluation will be underfunded. Additional funding for product evaluation should be sought.

2. The product evaluation, while generally successful in its procedures, failed in one notable respect. Both due to inadequate time and budget and to a failure in understanding by project principals and teachers, the project management failed to control sufficiently the selection of control and experimental groups.

   The Project Director planned not only to compare experimental groups in regular classrooms and in learning disability clinics, but also to compare experimental groups with control groups drawn from both groups. The control groups would receive no special auditory perception training, but they would be pre- and post-tested for these skills. The control groups were generally selected from better readers. The testing consultant noted in his May 30, 1972, report to the Project Director, "There was a pervading feeling, without adequate proof, that the two groups had been arranged and were not randomly selected. The experimental group, almost without fail, scored lower as a group and were worse readers than the control group . . ."

Further questioning of principals and teachers indicated that in one-third of the experimental classes, the advisory committee and/or the teachers consciously placed low achieving students in them so they would benefit from the program. The teachers became aware of the difference this made when the disparity between groups was brought to their attention in March, 1972. Later, the Project Director discovered that many school principals had assigned students to classes generally to preserve homogeneity of reading ability. Lower students tended to congregate in experimental classes and better students into control classes.

It is clear that the processes used to assure adequate selection of a control group were either not developed or not followed. As noted above, the evaluators suggest underfunding was primarily responsible for some lack of control over product evaluation activities.

3. The evaluators conclude that despite the apparent failure to provide for a randomly selected control group, the product evaluation will be completed on time and will provide a surprisingly complete statistical evaluation of the effect of the auditory perception techniques and materials on improving project children's reading ability.

8.0 To provide for dissemination of the project results.

A. Evaluation Activities

1. The evaluators interviewed the Project Director.

2. The evaluators reviewed correspondence and reports sent to individuals and districts inquiring about the project.

3. The evaluators reviewed publicity releases on the project.

4. The evaluators reviewed the dissemination activities planned for the project.

B. Evaluation Results

1. The evaluators conclude that the project results will be widely disseminated because of the following:

   a. The Project Director is a widely known expert in auditory perception. The consulting staff for materials development is also widely known. Their joint activities are already known in many areas due to publicity releases in the local county school district paper and through coverages of speeches and panel discussions the Project Director has contributed.

   b. The Project Director has already shared many project results with individuals and districts who have written to inquire about the project. Copies of this correspondence are in the project files.

   c. The Project Director is an experienced educator and project director. Her work as a PACE Center administrator and in other projects has given her experience to plan for wide dissemination of the project reports to all appropriate state and local educational agencies.

3. Indicate clearly the success or failure of each objective.

   A. Except for procedural objective 5.0 which was cut from the the project because of underfunding, all procedural objectives were successfully met. An in depth analysis of the degree of success of each objective is included in the analysis of the findings for each objective included in question 2.

4. Can the finds be generalized, or are they applicable only to the groups served by the program?

   A. Because this is the second year of a three year experimental project applying auditory perceptual training to improving reading, the results can be applied only to the group served by the program. At the conclusion of the third year next summer, the results should have broad applicability to the teaching of auditory perception skills and the application of those skills to improving reading for a wide and varied group of students.

5. What were the causative factors for unmet objectives?

   A. Only procedural objective 5.0 (To conduct a feasibility study of the use of rate controlled--compressed--speech for improved listening and reading rate and comprehension) was unmet. The only reason it was not completed related to the fact that only a portion of the project was approved for funding. This objective was cut due to lack of funds with the approval of applicable state and local educational agencies.

6. What are the other important findings which were not anticipated?

   A. All findings (anticipated and unanticipated) are discussed in depth in the answer to question 2.

SUPPLEMENTARY EVALUATION REPORT

By

BELLE RUTH WITKIN, PH.D.

PROJECT DIRECTOR

SUPPLEMENTARY EVALUATION REPORT

In addition to the two external evaluations which were reported in the previous sections, the project director and staff performed extensive data analyses and conducted ongoing evaluations in the classrooms. These activities were used as feedback for management, to correct instructional and testing procedures, and for various kinds of decision making. Considerable assistance was rendered by graduate students in educational psychology at Cal-State University, Hayward, under the direction of Dr. Thomas E. Whalen.

The following data were gathered and analyses performed by the project staff:

1. Analysis of class progress -- All lessons and Interim Review Tests were corrected and scored by the staff. Profiles of achievement were constructed for each class separately, and composite profiles for Groups A and B separately.

2. Analysis of individual student progress -- All pretests and post tests were administered and scored by staff, and individual profiles were constructed for all students. These profiles were derived from standard scores computed around the pretest means. Samples of these will be discussed later.

A stratified random subsample of 54 students--45 from Group A and 9 from Group B--was studied during the year. Stratification was based on a 9-cell matrix of low, average, and high reading listening skills. Individual lesson and IRT profiles were constructed for each of these students. Examples will be discussed later in this section.

3. Classroom Observations and teacher feedback -- Continual observations of the field test of the materials and feedback from teachers and students were used to modify the program and to design the extensive in-service training for the third year. These observations also furnished data which helped explain why experimental group mean gains were not significantly higher than control group mean gains.

4. Analysis of the CAPT -- An extensive analysis was made of the CAPT, for purposes of revision and use in the third year of the project. This was done because the test is more comprehensive than published tests in auditory perception, it is easy to administer, and has wide application beyond the scope of this project.

The CAPT was also administered in spring 1972 to first, second, and third grade classes not participating in the APT project, in order to gather normative data.

5. Listening and reading survey -- In order to obtain accurate data on the economic and educational background of the families of the students, a listening and reading survey was sent to parents of both the experimental and control group participants.

6. Data from additional project sites -- Liaison was maintained with two project sites out of the county, which tried out the first set of the materials at their own expense.

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1. Analysis of class progress in the APT program

The student behavioral objectives for the four units of the program are listed in Appendix B. A description of the way in which the lessons were given is found on pages 15 and 16, above.

Scores on each of the 39 lessons and the four Interim Review Tests were recorded for each student. Tabulations were made showing the percentage of students reaching criterion on each lesson and IRT, as well as the mean percent correct. Analyses were made for each class individually, and for composite Groups A and B.

Criteria for the lessons, based on performance from the first project year, had been set at 80/80. Early in the program it was found that this criterion was too high for some classes, for the following reasons. In the first year, lessons were administered to students in groups of 5 to 15, and a certain amount of teacher intervention was permitted. In the second year, Group A classes averaged 28-32 students taking the lessons all together, no teacher intervention was permitted, the students took twice as many lessons as in the first year, and many lessons had been revised to provide more challenge.

Appendix C contains class profiles showing the mean percent of items correct for the lessons and IRT's. Figures 1 and 2 show composite class profiles on the four sets of lessons for Group A students in regular second grade classrooms. Figures 3 and 4 show composite class profiles for Group B, students in learning disability clinics.

In spite of variations in performance from lesson to lesson within sets, both A and B groups reached criterion levels on the first three Interim Review Tests. On the fourth set of lessons, however, both groups had much more difficulty, although Group B did considerably better than Group A. Table 16 in Appendix A summarizes the Interim Review Test data for the two groups, and shows that students made satisfactory progress for most of the program.

Early in the year it was found that the individual classes differed tremendously in their ability to handle the lessons without teacher intervention. Separate analyses were made for each class, and their progress charted. Figures 5, 6, and 7 show a comparison of scores reached on the lessons and test of Set 1 by the six Group A classes; Figures 8 and 9 show progress on Set 1 for Group B classes. The data for Group A are also summarized in Tables 17 and 18 in Appendix A. Similar analyses for Sets 2, 3, and 4 are on file in the project office.

Although the general shapes of the profiles were similar from class to class, there were striking differences among classes. It is clear that these differences must be taken into account in using any program such as the APT. There were great initial differences among the classes in cultural and economic background, noise environment, reading ability, and ability to tolerate distraction and frustration. Two of the teachers were also absent for illness, one for an extended period.

In addition, the teachers in Group A had been asked not to assist the children, except to answer questions regarding procedure. This lack of intervention was built in deliberately, in order to determine exactly what the audio lessons would do without individualization or adaptation to differing needs.

Summary and recommendations: On the basis of the foregoing analysis, major changes in the program will be made for the third year. (1) Several lessons have been revised to bring the tasks within range of average second graders and to overcome procedural problems. (2) Teachers will receive extensive inservice in methods of adapting the program to individual needs through prescribed intervention and branching procedures. (3) The program will be adapted to different class sizes and environments. (4) More flexibility will be available for teachers and students in using the program.

2. Analysis of individual student progress in the APT program

Profiles showing performance on all pretests and post tests were constructed for each student. In addition, individual progress charts on lessons and IRT's were kept for the subsample.

Figure 10 in Appendix D shows the way in which students were selected for the subsample. Five students from Group A experimental classes were randomly chosen from each of the 9 cells of the matrix. Nine students from Group B were randomly selected from the total Group B sample without regard to their position in the matrix. It should be stated that, in comparison with Group A controls, the Group A experimental students were disproportionately represented in Cell 1, the poor listener-poor reader category.

Figures 11 through 19 show comparisons on pre- and post tests for 9 students, one each from matrix cells 1 through 9. Figures 11a through 19a show the corresponding profiles for the same students on the lessons and IRT's. The profiles for the test battery are based on comparisons with the mean of all students taking the pretests. The lesson profiles are based on percent of items correct. Criterion was set at 80 percent.

A striking feature of both the test battery profiles and the lesson profiles is the variability within each student in regard to performance from day to day, and skill to skill. It was hoped that some pattern of performance would emerge for students falling within the same cell on the pretests, but this did not prove to be the case. Students with similar reading and listening scores initially, varied widely on their progress in the lessons, and in their post tests.

Moreover, the fact that a student was a good oral reader was no guarantee of ability to perform well on the auditory tasks. This is probably because auditory processing of the kind taught in the program is more closely related to attention, set, motivation, and ability to shut out distraction, than to language and cognitive skills. In fact, it appears that the lessons tap basic learning abilities which are not normally taught directly. And even though a second grade student may be above average in oral reading accuracy and comprehension, he may be highly distractible or have other problems in immediate information processing which will interfere with his learning later on.

The following conclusions can be drawn from an examination of the individual profiles in the subsample of 54:

(1) Students with low initial listening ability, regardless of their initial reading ability, made the most striking gains in both reading and listening.

(2) Performance on the lessons and IRT's was not consistent. Table 12 in Appendix A shows that the pretest battery was a better predictor of post test performance than of performance on the IRT's, and that correlations were low among the IRT's for both competing messages and auditory discrimination tasks.

(3) Most students made gains, some of them quite large, on the memory subtest of the SFTAA. This is a task which requires listening to a story and answering questions about it 20 minutes later, after intervening listening tasks. Since this skill was not taught directly in the program, the result shows an interesting transfer to an important real-life listening task.

(4) Many students in learning disability clinics did much better than might have been expected, both on the lessons and the tests. Figures 14 and 16 show profiles of two such students. Figures 14 and 14a are of a 9 year old girl, whose initial reading level was grade level 2.1, who was highly distractible, and who functioned below 8 year norms on auditory discrimination tasks. Both language and non-language achievement was low. After six months of the APT program, and without specific help in reading from the LDG clinician, the student's oral reading accuracy was at grade 4.1 and she had made striking gains on all but one of the auditory tests, in some instances as much as 2 standard deviations.

Figures 16 and 16a are of a 10 year old boy, whose reading skills rose from grade 1.9 to 3.2. He did very well on the lessons and interim tests, and his pre-post listening gains were particularly good in certain competing message and linguistic tasks. Even more encouraging was his post test performance on delayed memory and retention, which rose from below average for 7 year olds to well above average.

Such gains by children in learning disability groups are particularly important, since they have had a history of failure for several years. Indeed, far from progressing month for month in school, they fall farther and farther behind every year. Although the APT materials were designed for the age range 6.5 to 8.5, they have been found useful for children up to the sixth grade.

The rest of the profiles in Appendix D are representative of the subsample in that they show the unevenness of performance from day to day that characterizes what are essentially non-cognitive tasks. Together with information gathered from the first year, such data point to the fact that auditory perceptual training is most effective when done with small groups, and with teacher intervention for those children who have more than average difficulty with auditory processing.

To the extent possible, this same subsample will be followed up in the third year of the project. In addition, those children who had losses on the post test CAPT will be followed up in a special study, to determine what can be done in the future to help others like them.

3. Classroom observations and teacher feedback

All classes were visited several times by the project director and technical assistant, teachers and children were interviewed, and a meeting was held after post test data were in to determine the reasons for the non-significant gains of the experimental group. Teachers were unanimous in declaring that the program was beneficial to their students, and all have asked to be in it again this coming year. In addition, the control group teachers have asked to be included, and the principals and advisory committee members have requested much wider participation.

The following information was gathered which was not available to the external consultants when they wrote their reports:

(1) Post testing was done concurrently with state-mandated reading and math testing. While this did not disturb most of the control group children, who were better learners to begin with, and who felt no particular stake in the program, the pressure did affect a large number of students in the APT classes, many of whom have considerable anxiety anyway about their ability to perform.

(2) Although 75 to 85 percent of the children can use the program without additional help, those with slow learning rates and high anxiety levels need intervention and support. This might be done with teacher aides or older students, if the teacher has too large a class or other constraints.

(3) In general, the children enjoyed the lessons, thought they were fun, and identified with the people who narrated the scripts. They would like feedback on their progress, and more flexibility in the use of the lessons, with provisions for working at their own pace and as their interests dictate.

The project director discovered early in 1972 that the control group students in general scored higher on reading and listening pretests, and had higher verbal ability than the experimental group. At that time the program could have been modified to permit intervention and branching by teachers to assure mastery of the lessons to criterion levels. After discussion with the consultants, the project director decided not to do this, for the following reasons: (1) It was thought important to determine precisely how much the children would benefit from use of the audio tapes without teacher assistance; (2) neither time nor money was available for the extensive teacher inservice that would be necessary; and (3) in most cases, teachers in the program could not organize their classroom management procedures to individualize the instruction where needed.

The decision turned out to be a poor one. The project staff took a calculated risk, and lost! Repeated class observations showed that as many as 25 percent of the children in some "regular" second grade classrooms have attention and memory problems like those of children in learning disability clinics, and for them, small group instruction and individualization for their needs are absolutely essential.

The program format will be altered next year to take the foregoing into consideration. Although the audio lessons cannot be drastically changed without expenditure of additional funds, they can be used in different ways, which will make their impact more effective.

4. Analysis of the CAPT

The tape-recorded Composite Auditory Perceptual Test was constructed by the principal consultants to perform the following functions: (1) to test the major objectives taught in the APT lessons, and (2) to provide a broad spectrum diagnostic test of auditory processing which could be used by teachers, psychologists, or reading specialists independently of the APT program. It can be administered and scored by anyone without specialized training.

The auditory abilities tested in the CAPT were selected after a factor analysis had been performed on the individual test battery given to all students in the first year of the project, and after analysis of the results of the first year's pilot testing of the APT lessons. There were two major sections--Competing Messages and Auditory Discrimination--with three CM subsections and four AD subsections. (See Table 1 for a description of the test.)

Two types of analysis were performed. The first was an item analysis to determine those items which differentiated between the best and poorest listeners, and to determine whether the foils used in the multiple choice picture responses were discriminating. This was done by Robert Stanovich, a graduate student in educational psychology at Cal-State University, Hayward, and project staff. The second was a normative study in grades 1 to 3, done by Harry Sturgeon, also a graduate student in educational psychology at Cal-State, Hayward, who used it as a basis for his master's thesis.

CAPT norming report -- The CAPT was administered to 367 students in seven school districts in Alameda County during two weeks in March 1972. Students tested were first, second, and third graders in socioeconomically middle class residential areas. The schools participating were: Alisal Elementary School, Pleasanton; Bunker Elementary School, Newark; Clifton Elementary School, Castro Valley; Smith Elementary School, Livermore;

Longwood Elementary School, Hayward; Washington Elementary School, San Leandro; and Sunol Elementary School, Sunol.

There were five first grade classes, six second grade classes, and six third grade classes tested. After observing the test given by Patricia Lehnen, technical assistant to the project, Mr. Sturgeon handled all test administration.

In addition to the classes mentioned, Mrs. Lehnen administered the CAPT to 35 kindergarten students at Gomes Elementary School, Fremont, on an experimental basis to determine the feasibility of using the instrument on this age group. After completing the testing, it was decided not to include these students in the norming.

An analysis was also made by the project staff of the distribution of scores on the CM and AD subsections of the CAPT, for both pretests and post tests. Histograms of these distributions are shown in Figures 20 through 23 in Appendix E.

On the basis of the data from the foregoing analyses and normative study, the CAPT is being revised to make the instructions and examples more explicit, allay test anxiety, simplify the correction and scoring procedures, eliminate ambiguities, and provide a better range of difficulty in the tasks. One drawback was that the first version needed to be given in two sessions, to prevent fatigue. The revised edition can be administered in one session, with two short breaks.

In summary, it was found that the auditory tasks tested have developmental implications, in that the scores rise with age. However, although most of the tasks should be within the competency of "average" second graders, many primary grade children have not reached these levels. Since these tasks of attention, short term memory, temporal sequencing, closure, discrimination, and receptive language are necessary for normal school learning, any pronounced deficits in these areas are diagnostic of problems which will have increasing importance as the child proceeds further in school.

A word about the relationship between the auditory tasks and socioeconomic status(SES). Although Sturgeon found a moderate correlation between SES and ability to perform on the CAPT, the APT project did not. This discrepancy may be due to the different measures used. On the normative study, a general designation of high, medium or low SES was made on the basis of data about each school and its neighborhood. (This is generally the way SES data are generated for studies in the schools.) On the other hand, the Index of Social Position used in the APT project was specific and individual for each child, based on the educational level as well as type of occupation of his parents. The scale will be discussed in more detail in the section below. However, since the ISP is more exact than the general SES measure used in the normative study, it can probably be stated with confidence that the CAPT does not have a large bias in favor of upper or middle class children.

5. Listening and reading survey

In order to acquire data for the Index of Social Position described above, a survey was sent to parents of all children in both experimental and control groups. Two forms were used, one in English and one in Spanish. The survey was mailed directly to the parents, who were provided self-addressed envelopes for its return. Returns were coded so that correlations could be made between the ISP and all pretest scores. Copies of the survey instrument are in Appendix F.

The Index of Social Position was used to determine the extent to which the educational and occupational background of the children was related to their ability to perform the auditory processing tasks of the program. It is different from other SES measures in that it uses a weighted scale to account for both factors, not just occupation. It also gives more weight to the status of an occupation than to income. Children's familiarity with oral language and range of language experiences is probably more highly related to these factors than to income alone. If the ISP had turned out to be highly correlated with initial listening ability on the CAPT, the scores would have been used as a covariate in the statistical analysis. This did not prove to be the case.

For those wishing to use the APT tests and lessons with children from different backgrounds, the fact that ISP had a low correlation with the test is good. Responses are to easily identified pictures, rather than to words; the vocabulary is of kindergarten and first grade difficulty, and is taught specifically; the materials in general do not require prior knowledge, and minimize the cognitive aspects; and taken together, they apparently have low cultural bias.

Over 60 percent of the questionnaires were returned. The results of the reading and listening survey are on the following page. Although no statistical correlations were made between the data and performance on the APT lessons, the information will be used in a follow-up study on a subsample of both experimental and control group children, to determine the part played by home background in mastery of the program.

It is interesting to note that, although over half of the parents considered their children good listeners, 80 percent felt the school should provide more instruction in listening. Over half thought their children were good readers, and 76 percent were satisfied with the way the school was teaching their children to read.

Of particular interest were the spontaneous comments made by the parents regarding problems they thought their children had. These ranged from an awareness of hearing, speech, reading, or visual perceptual problems, to statements about study habits, poor concentration, and short attention span. The largest number of comments related to inability of the child to work in the face of distraction, to perform consistently, to tolerate frustration and worry after making mistakes, to work under pressure, and to have adequate self-confidence, particularly in relationship to slowness of comprehension.

RESULTS OF LISTENING AND READING SURVEY

1. SIBLING ORDER:

Oldest	32%
Youngest	34%
In the middle	31%
Only child	.017%

2. HOURS OF DAY SPENT:

Watching T.V.	2.5 hours
Listening to radio	21.7 minutes
Reading at home	41.3 minutes
Playing outside	2.2 hours

3. PARENTS' PERCEPTION OF CHILD:

Good listener	53%
Poor listener	43%
School should provide more instruction in listening	80% Yes 16% No
Good reader	54%
Poor reader	43%
Satisfied with the way the school is teaching your child to read:	76% Yes 21% No

4. PARENTS' PERCEPTION OF THE WAY THEIR CHILD LEARNS BEST:

Showing him	81%
Telling him	32%
Having him read something	26%
Rewarding him	19%
Letting him find out for himself	20%
Having him look at pictures	25%
Having him work along with you	75%

Other: Letting him work alone; just answering questions; by example; repetition and memorizing; teacher; special extra reading; homework or drills; practice on own after being shown or told; mother and sister help; praise and encouragement; written example; patient explanations.

5. SPECIAL PROBLEMS IN LEARNING:

28% Yes
72% No

Although parents were told that they need not sign their names, several did so--one even sent in the questionnaire after moving to the middle west. Because of the confidential nature of the survey, the comments were not passed on to the teachers. However, the overall results will be used in the third year for discussion in the inservice training, and an effort will be made to involve parents in the APT program itself.

6. Data from additional project sites

Two additional field test sites outside of Alameda County were set up during March-May, 1972, at the request of people who had heard about the project. No costs were incurred by Title III. One was in the Bilingual Diagnostic Placement Program in Santa Ana, California. Instructors were Judy Montgomery, speech therapist, and Herb Michel, perception teacher. Both instructors observed the project in the four LDG clinics in Fremont. Their report is found in Appendix G.

The purpose of trying out the program there was to determine the feasibility of future use with EMR children and those with a Spanish-language background. The tapes and listening books were duplicated in Santa Ana. The booklets were laminated, so that children could erase their marks and do the lessons over to achieve criterion level. While this was novel and highly motivating at first, the instructors eventually decided that erasures were too easy, and that the lamination feature took attention away from the task.

Children took the lessons in very small groups. In general, after the first set, the lessons became too difficult for the children. If Santa Ana uses the program next year, it will be with 9 to 12 year old non-readers, who can do the marking tasks, but who need the skill development.

The other test site was at the Campus School of Eastern Washington State College, Cheney, Washington. Dr. Jackson Martin, director, and three primary grade teachers participated. At this writing, their evaluation report is not yet in. A telephone conference in May, however, indicated that teachers and children were highly pleased with the lessons, which were taken by the children individually in listening centers on a self-demand basis. Information from their experience with the first set of lessons is being used to modify the program in Alameda County next year.

Conclusions

Evaluation activities by project staff proved highly useful for making decisions for the third year. Analyses of class and individual progress were used to provide bases for revision of materials and procedures for content of teacher inservice. Classroom observations proved useful as checks on the reasons for student progress or lack of it. The listening and reading survey showed the nature of parental interest and suggested possibilities for parent involvement next year. Finally, extensive data on the CAPT made it possible to improve the validity and reliability of the instrument, contributing to its general usefulness as a diagnostic tool beyond the confines of the APT program.

COMPONENT IV

FINANCIAL REPORT

Form III-104

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Bureau of Instructional Program Planning and Development
Title III, E.S.E.A.
Sacramento, California 95814

PROPOSED BUDGET SUMMARY/EXPENDITURE REPORT OF FEDERAL FUNDS

Name and Address of Agency
Alameda County Supt. of Schools, 224 West Winton Ave., Hayward, Ca. 94544

Project Number
01-00000-0471

PART I - EXPENDITURES (other than construction)

___ Proposed Budget Summary*
___ Estimated Expenditure Report
XX Final Expenditure Report

Budget Period, (Month, Day & Year)
Beg.: July 1, 1971 End: June 30, 1972

Expenditure Accounts		EXPENSE CATEGORIES							
		Salaries							
FUNCTIONAL CLASSIFICATION	Account No.	Pro-fessional	Nonpro-fessional	Contracted Services	Materials & Supplies	Travel	Equip-ment	Other Expenses	TOTAL EXPENDI-TURES
1	2	3	4	5	6	7	8	9	10
1. Administration	100								
2. Instruction	200	27,092	15,543	23,386	12,301	4,159			82,481
3. Health Service	400								
4. Pupil Transportation Services	500								
5. Operation of Plant	600								
6. Maintenance of Plant	700							1,085	1,085
7. Fixed Charges	800	1,292	2.550						3,842
8. Food Services	900								
9. Community Services	1100								
10. Remodeling(if costs total more than $2,000 enter in Part II)	1220c								
11. Capital Outlay (Equipment only)	1269						63		63
12. TOTALS →		28,384	18,093	23,386	12,301	4,159	63	1,085	87,471

Authorized Agent ______________________
(Signature)

Date JUL 10 1972

Form III-104

PART II - CONSTRUCTION EXPENDITURES

(Check One)

___ Proposed Budget Summary

___ Estimated Expenditure Report

XX Final Expenditure Report

Budget Period (Month, Day & Year)
Beginning:
Ending:

	EXPENDITURE ACCOUNTS	Acc't Number	Amount	Negotiated Budget
	1	2	3	4
1	SITES			
A	Professional Services	1210a		
B	Improvement to Sites	1210c		
2	BUILDINGS			
A	Professional Services	1220a		
B	New Buildings and Building Additions	1220b		
C	Remodeling (if $2,000 or less, enter in Part I)	1220c		
3	ADMINISTRATIVE EXPENSES (Specify Below)	1220		
A				
B				
4	LEASING OF FACILITIES			
5	TOTAL		$	$

PART III - SUMMARY - AUTHORIZATIONS, EXPENDITURES AND BALANCES

Budget Period (Month, Day and Year)
Beginning: July 1, 1971 Ending: June 30, 1972

___ Estimated Expenditure Report

XX Final Expenditure Report

XX Project Continuing ___ Project Terminated

1	2	3
AUTHORIZATIONS, EXPENDITURE AND BALANCES		
1. Amount of Grant Award for Budget Period →	87,471	
2. Unexpended Balance from Grant of Prior Budget Period →	-0-	
3. Total Amount Authorized for Expenditure for the Budget Period (Sum of Items 1 & 2) →		87,471
4. Expenditures during Budget Period →		87,471
5. Unexpended Balance of Funds Authorized for Expenditure for the Budget Period →		---
PART IV - CUMULATIVE TOTALS		
1. Cumulative Total of Grants Awarded Since Project Inception →		158,820
2. Cumulative Total of Cash Received Since Project Inception →		141,326

CERTIFICATION: I CERTIFY that the expenditures reported above have been made, and that all obligations have been liquidated; that this project has been conducted in accordance with applicable laws and regulations; that the approved application for this project plus any approved amendments are on file; and that full records of receipts and expenditures have been maintained and are available for audit.

Signature of Authorized Agent

July 10, 1972
Date

PROJECT PHASES AND PER PUPIL COSTS

1. 367 Number of pupils directly served by the project.
2. $75,203 Developmental costs.
3. $ 205 Developmental costs per pupil.
4. $ 8,274 Implementation costs.
5. $ 23 Implementation costs per pupil.
6. $ 3,931 Operational costs.
7. $ 10 Operational costs per pupil.

The above figures represent expenditures incurred by the project, but they do not reflect actual implementation and operational costs that would need to be borne by districts after adoption. Implementation includes teacher inservice, which would have no costs for those districts having trained resource teams by June 1973. It also includes purchase of one set of audio tapes and a Teacher Manual for each class in the program, an expenditure of about $50 per class.

Operational costs will consist only of purchase and replacement of the listening booklets which accompany the audio tapes. These are consumable, and with mass production, it is estimated that the cost would be $4:00-$5:00 per pupil or less. The lessons constitute a year's program. The diagnostic pretest will probably cost $ .50 per pupil.

Form FO 379
(Revised 7-70)

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Bureau of Program Planning and Development, Title III, ESEA
Supplementary Centers and Services Program
(Title III, ESEA, PL 89-10)

CLAIM FOR REIMBURSEMENT

Project Number 0471	Budget Period (Mo., Day, Year) Beginning: July 1, 1971 Ending: June 30, 1972	Date of Notification of Grant Award June 10, 1971	X Project Continuing ___ Project Terminated

NOTE: A separate claim must be made for funds awarded from different fiscal years. Therefore, a separate claim must be made for each grant award. (See instructions on the back of this sheet.)

Expenditures	$ 87,471
Cash advance received	78,724
Reimbursement now claimed	$ 8,747
- OR -	
Excess cash received (See instructions for handling excess)	$

CERTIFICATION

I CERTIFY that the expenditures reported above have been made, and that all obligations have been liquidated; that this project has been conducted in accordance with applicable laws and regulations; that the approved application for this project plus any approved amendments are available for audit.

	Alameda County Schools
Signature of Authorized Agent	Legal name of district or organization
Assistant Supt., Business Services	224 West Winton Avenue
Title	Street Address

September 6, 1972
Date Signed

Hayward	CA	94544
City	State	ZIP Code

FOR STATE USE ONLY
PROJECT COMPLETION
AND CLAIM APPROVED

By ____________

Bureau of Program
Planning and
Development

APPENDIX A

Tables of Data Analyses

Table 1

DESCRIPTION OF TESTS

1. Teacher Rating Scale: a 6-point Likert scale for assessment of student listening ability.

Gilmore Oral Reading Test

An individually-administered, standardized test of oral reading proficiency with three subtests:

2. Gilmore Accuracy Subtest: a test of oral reading accuracy based upon avoidance of 8 types of errors.

3. Gilmore Comprehension Subtest: a test of oral reading comprehension based on correct responses to a combination of recall and inferential items.

4. Gilmore Rate Subtest: a test of oral reading rate measured in words per minute.

Composite Auditory Perceptual Test (CAPT)

A taped, group-administered, project-developed test of auditory perception with two major subsections:

Competing Messages (CM) Subtests

Recorded message in which two voices speak simultaneously at varying signal-to-distraction ratios with four subtests:

5. CM I: a 10-item subtest using a male leader and female distractor with varying S/D ratios for recognition of spondee words.

6. CM II: a 15-item subtest using a female leader and male distractor with more variable S/D ratios for recognition of single syllable words chosen for their phonemic characteristics.

7. CM III: a 15-item subtest using a female leader and female distractor for recognition of single syllable words.

8. CM IV: a 15-item subtest using randomly alternating male and female leaders with a 0 decibel S/D ratio throughout for recognition of single syllable words.

Auditory Discrimination (AD) Subtests

Recorded instructions required students to respond to various phonetic and linguistic tasks with three subtests:

9. AD I: a 36-item subtest requiring analysis of speech sound placement, and consonant and vowel discrimination.

10. AD II: a 65-item subtest measuring the skills of auditory closure, synthesis, and syllabication of real and nonsense words.

11. AD III: a 22-item subtest dealing with language association concept categories and grammatical categories such as active-passive, negative, and verb tense.

Short-Form Test of Academic Achievement (SFTAA)

A standardized, group-administered test of verbal and non-verbal aptitudes; four subtests:

12. Vocabulary Subtest: a 25-item subtest measuring verbal comprehension and knowledge of word meanings.

13. Analogies Subtest: a 20-item non-verbal subtest measuring the recognition of literal and symbolic relationships.

14. Sequences Subtest: a 20-item non-verbal subtest using dots, numerals, and letters requiring the recognition of patterns, rules, and principles.

15. Memory Subtest: a 20-item verbal subtest involving delayed retention of story details and general comprehension.

16. Lindamood Auditory Conceptualization Test: a 28-item individually administered test designed to measure conceptualization of speech patterns, specifically temporal sequencing.

Table 2

DESCRIPTION OF TARGET POPULATION

	A		B	
	X	C	X	C
Boys	85	70	25	30
Girls	67	69	14	7
Totals	152	139	39	37
Ethnic Groups:				
1. Spanish surname	18	19	9	6
2. Other white	108	92	28	31
3. Black	22	26	1	0
4. Oriental	1	1	1	0
5. American Indian	3	1	0	0
6. Other non-white	0	0	0	0
Language of the Child:				
1. Standard English	130	135	36	37
2. Black English	20	3	1	0
3. Foreign Dialect	2	1	2	0
Language of the Parents:				
1. English	147	130	36	37
2. Other	5	9	3	0
Social Class:				
I 11-17	4	3	4	2
II 18-27	8	13	5	6
III 28-43	40	31	8	6
IV 44-60	70	69	18	13
V 61-77	30	23	4	10
Mean:	48.46	47.55	42.68	47.08
Chronological Ages in Months (October 1, 1971):				
Group A:				
81-83	18	21		
84-90	71	67		
91-96	41	30		
97-111	21	20		
Mean:	90.53	90.12		
Group B:				
83-96			5	5
97-108			10	4
109-120			9	9
121-132			8	12
133-145			6	7
Mean:			114.45	118.35

2

Table 3

DIFFERENCES BETWEEN EXPERIMENTAL AND CONTROL GROUPS ON PRETEST MEANS

	Group A			Group B		
	X	C		X	C	
	means		t-test	means		t-test
1. TEACHER RATING SCALE	3.19	3.06	.75	1.90	2.02	.56
2. GILMORE ORAL READING TEST:						
a. Accuracy (Raw Score)	16.93	17.36	.35	16.35	20.17	1.44
b. Accuracy (Grade Equivalent)	2.06	2.11	.35	1.99	2.37	1.22
Type of reading errors, average number per paragraph:						
Substitutions	1.68	1.74	.33	1.90	2.15	.67
Mispronunciations	.13	.12	.12	.30	.15	1.28
Words pronounced by examiner	2.28	1.86	2.10*	1.02	.82	.74
Punctuations	.14	.16	.30	.32	.22	.85
Insertions	.09	.09	.13	.10	.13	.35
Hesitations	.12	.18	1.53	.10	.15	.60
Repetitions	.69	.78	1.07	.77	1.15	1.19
Omissions	.08	.14	.96	.22	.10	1.52
c. Comprehension (Raw Score)	16.65	16.95	.29	16.67	19.77	1.27
d. Comprehension (Grade Equivalent)	2.27	2.38	.66	2.38	2.86	1.12
e. Rate (Words per Minute)	52.21	57.24	1.37	51.75	69.05	2.06*
3. CAPT - Competing Messages (CM):						
Part I	4.99	6.26	5.24**	5.05	6.85	3.56**
Part II	8.88	9.26	1.19	8.10	9.20	1.66
Part III	7.78	8.41	1.87	7.30	7.75	.52
Part IV	12.13	12.68	2.22*	11.70	12.63	1.66
CM Subtotal	33.79	36.53	3.13**	32.15	36.42	2.12*
4. CAPT - Auditory Discrimination (AD):						
Part I	49.93	52.08	2.27*	53.80	55.38	.95
Part II	38.98	39.05	.07	39.77	39.88	.05
Part III	13.70	14.85	1.78	12.93	14.02	.75
AD Subtotal	102.54	105.91	1.75	106.50	109.28	.68
CAPT TOTAL	136.34	142.45	2.55*	138.65	145.70	1.33
5. SHORT FORM TEST OF ACADEMIC ACHIEVEMENT:						
Part 1. Vocabulary	15.24	15.22	.03	17.90	19.75	2.13*
Part 2. Analogies	10.83	11.15	.68	11.80	12.65	.97
Part 3. Sequencing	11.88	12.49	1.20	12.82	14.35	1.48
Part 4. Memory	11.02	11.39	.82	10.75	13.13	2.45*
SFTAA Language (1 + 4)	26.26	26.61	.47	28.65	32.88	2.53*
SFTAA Non-Language (2 + 3)	22.71	23.64	1.12	24.63	27.00	1.41
SFTAA TOTAL	48.97	50.25	.95	53.28	59.88	2.21*

*significant at .05 level
**significant at .01 level

Table 4

PRE-POST COMPARISONS

Experimental Group A

Test	Pretest		Post Test		
	Mean	Standard Deviation	Mean	Standard Deviation	Correlated t-ratio
TEACHER RATING SCALE	3.20	1.43	4.12	1.35	8.20*
GILMORE ORAL READING:					
Accuracy) Grade Equivalents	2.10	1.08	3.35	1.11	16.57*
Comprehension) Grade Equivalents	2.39	1.42	3.89	1.68	11.89*
Rate - Words Per Minute	54.25	27.59	73.81	23.09	10.98*
CAPT: (Competing Messages)					
CM I	5.12	2.20	6.96	1.93	8.85*
CM II	9.07	4.05	9.69	2.89	1.58
CM III	7.95	2.98	7.67	3.26	- .85
CM IV	12.27	2.94	11.67	2.58	- 2.11*
CM Subtest Total	34.09	8.09	36.01	8.21	2.92*
CAPT: (Auditory Discrimination)					
AD I	50.12	10.30	57.21	7.09	8.42*
AD II	39.37	7.71	43.51	8.26	5.99*
AD III	13.83	5.79	15.02	5.53	2.15*
AD Subtest Total	103.62	17.70	115.91	16.13	9.39*
CAPT TOTAL	137.57	22.45	151.92	20.71	9.30*
SFTAA IV - MEMORY	11.34	3.96	13.02	4.03	5.30*
CAPT CM MARKING ERRORS	.84	3.38	1.16	2.48	5.59*
CAPT AD MARKING ERRORS	3.24	4.63	5.70	6.13	4.35*

*Significant at .05 level

Table 5

PRE-POST COMPARISONS

Experimental Group B

Test	Pretest		Post Test		
	Mean	Standard Deviation	Mean	Standard Deviation	Correlated t-ratio
TEACHER RATING SCALE	1.91	1.01	1.91	1.01	0
GILMORE ORAL READING:					
Accuracy) Grade Equivalents	2.24	1.43	3.09	1.10	5.34*
Comprehension)	2.65	1.68	3.64	1.87	2.86*
Rate - Words Per Minute	55.00	32.91	65.67	19.90	2.25*
CAPT: (Competing Messages)					
CM I	5.12	2.37	7.43	1.77	4.99*
CM II	8.18	2.66	10.12	2.94	3.25*
CM III	7.43	3.25	8.64	3.90	1.89
CM IV	11.85	1.99	11.73	3.02	- .26
CM Subtest Total	32.58	8.17	37.91	8.69	3.95*
CAPT: (Auditory Discrimination)					
AD I	53.52	8.07	56.79	10.60	.25
AD II	39.76	9.45	44.67	8.76	3.37*
AD III	13.18	6.55	16.79	5.60	2.64*
AD Subtest Total	106.45	18.31	118.24	20.75	4.51*
CAPT TOTAL	139.03	23.78	156.15	27.51	5.78*
SFTAA IV - MEMORY	10.39	3.51	13.42	3.63	6.88*
CAPT CM MARKING ERRORS	1.48	4.13	1.48	2.85	0
CAPT AD MARKING ERRORS	3.55	5.73	5.76	7 07	1.68

*Significant at .05 level

Table 6

SUMMARY OF PRE-POST GAINS

Group A

	Experimental					Control					
Test	Pretest#		Post Test		Difference	Pretest#		Post Test		Difference	Correlated t-Ratio
	$\bar{X}$	SD	$\bar{X}$	SD		$\bar{X}$	SD	$\bar{X}$	SD		
TEACHER RATING SCALE	3.20	1.43	4.12	1.35	.92*	3.11	1.47	3.98	1.30	.87	.11
GILMORE ORAL READING:											
Accuracy) Grade	2.10	1.08	3.35	1.11	1.25*	2.14	1.24	3.61	1.42	1.47	- 2.50*
Comprehension) Equiv.	2.39	1.42	3.89	1.68	1.49*	2.46	1.51	4.14	1.94	1.68	- 1.08
Rate - Words/Minute	54.25	27.59	73.81	23.09	24.56*	57.51	34.19	74.82	20.43	17.31	.74
CAPT: (Competing Messages)											
CM I	5.12	2.20	6.96	1.93	1.84*	6.27	2.04	6.75	2.05	.48	4.51*
CM II	9.07	4.05	9.69	2.89	.62	9.36	2.64	10.73	2.94	1.37	- 1.28
CM III	7.95	2.98	7.67	3.26	- .27	8.30	2.92	9.57	2.85	1.27	- 3.30*
CM IV	12.27	2.94	11.67	2.58	- .60*	12.64	2.01	12.59	2.46	- .05	- 1.19
CM Subtest Total	34.09	8.09	36.01	8.21	1.92*	36.47	7.15	39.55	7.33	3.08	- 1.11
CAPT: (Auditory Discrimination)											
AD I	50.12	10.30	57.21	7.09	7.09*	51.60	6.77	57.11	4.96	5.51	1.23
AD II	39.37	7.71	43.51	8.26	4.14*	39.14	8.29	46.43	8.13	7.29	- 3.08*
AD III	13.83	5.79	15.02	5.53	1.19*	14.99	5.54	16.25	5.17	1.26	- .05
AD Subtest Total	103.62	17.70	115.91	16.13	12.29*	105.65	15.84	120.02	14.20	14.37	- 1.19
CAPT TOTAL	137.57	22.45	151.92	20.71	14.35*	142.13	19.19	159.48	18.62	17.35	- 1.43
SFTAA IV - MEMORY	11.34	3.96	13.02	4.03	1.68*	11.35	3.51	12.90	3.62	1.55	.34
CAPT CM MARKING ERRORS	.84	3.38	1.16	2.48	.32*	.47	1.43	.76	2.37	.29	
CAPT AD MARKING ERRORS	3.24	4.63	5.70	6.13	2.46*	2.47	4.80	2.89	5.11	.42	
LINDAMOOD AUDITORY CONCEPTUALIZATION			65.08	19.76				62.98	21.13		.81

*Significant at .05 level.

#Pretest scores are only for those who completed the program.

Table 7

SUMMARY OF PRE-POST GAINS

Group B

Test	Experimental					Control					
	Pretest#		Post Test		Difference	Pretest#		Post Test		Difference	Correlated t-Ratio
	$\overline{X}$	SD	$\overline{X}$	SD		$\overline{X}$	SD	$\overline{X}$	SD		
TEACHER RATING SCALE	1.91	1.01	1.91	1.01	0	2.03	1.03	2.06	1.01	.03	- 1.00
GILMORE ORAL READING:											
Accuracy) Grade	2.24	1.43	3.09	1.10	.85	2.45	1.60	3.68	1.55	1.23	- 1.30
Comprehension) Equiv.	2.65	1.68	3.64	1.87	.99	3.11	2.31	4.48	2.33	1.37	- .89
Rate - Words/Minute	55.00	32.91	65.67	19.90	10.67	70.63	41.82	80.28	31.65	9.65	.15
CAPT: (Competing Messages)											
CM I	5.12	2.37	7.43	1.77	2.30	6.97	2.30	7.84	1.83	.87	2.37*
CM II	8.18	2.66	10.12	2.94	1.94	9.34	3.33	9.69	4.16	.35	1.79
CM III	7.43	3.25	8.64	3.90	1.21	7.81	4.11	9.75	2.92	1.94	- .72
CM IV	11.85	1.99	11.73	3.02	- .12	13.03	1.96	12.84	1.95	- .19	.10
CM Subtest Total	32.58	8.17	37.91	8.69	5.33	37.16	8.87	40.13	7.67	2.97	1.31
CAPT: (Auditory Discrimination)											
AD I	53.52	8.07	56.79	10.60	3.27	55.34	6.80	57.31	7.78	1.97	.80
AD II	9.76	9.45	44.67	8.76	4.91	39.66	8.94	46.44	8.23	6.78	- .94
AD III	13.18	6.55	16.79	5.60	3.16	14.22	7.14	14.84	6.15	.62	1.83
AD Subtest Total	106.45	18.31	118.24	20.75	11.79	109.22	19.18	119.63	17.26	10.41	.45
CAPT TOTAL	139.03	23.78	156.15	27.51	17.12	146.38	23.74	159.75	21.89	13.43	1.02
SFTAA IV - MEMORY	10.39	3.51	13.42	3.63	3.03	13.28	4.24	16.22	12.24	2.94	.05
CAPT CM MARKING ERRORS	1.48	4.13	1.48	2.85	0	1.75	4.64	2.68	4.53	.93	
CAPT AD MARKING ERRORS	3.55	5.73	5.76	7.07	2.21	3.50	4.88	6.46	7.57	2.96	
LINDAMOOD AUDITORY CONCEPTUALIZATION			64.67	20.33				71.16	17.84		- 1.38

*Significant at .05 level

#Pretest scores are only for those who completed the program

Table 8

CAPT TEST-RETEST COEFFICIENTS OF RELIABILITY

Auditory Discrimination		Competing Messages	
AD I	.42	CM I	.39
AD II	.54	CM II	.42
AD III	.41	CM III	.22
AD subtest	.65	CM IV	.33
		CM subtest	.52

CAPT Total .66

Note: These coefficients were based upon control group data for Group A. The time interval between testing was approximately 7 months.

Table 9

PRETEST DIFFERENCES DUE TO ORDERING OF AD AND CM SUBTEST TEST ADMINISTRATION ON THE CAPT

FOR GROUP A ONLY

	CM First	AD First	t-test
CAPT - CM I	5.52	5.70	.72
CAPT - CM II	8.62	9.50	2.82**
CAPT - CM III	7.46	8.68	3.73**
CAPT - CM IV	12.41	12.39	.09
CM Subtotal	33.94	36.27	2.66**
CAPT - AD I	51.60	50.38	1.27
CAPT - AD II	39.64	38.41	1.38
CAPT - AD III	14.44	14.09	.53
AD Subtotal	105.60	102.82	1.44
CAPT TOTAL	139.54	139.09	.19

**significant at .05 level

Table 10

CORRELATION MATRIX -- PRETEST SCORES FOR GROUP A
1971-1972

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. Sex	1.00	-.07	.12	.27	.27	.15	.29	-.02	-.02	.03	.02	.00	-.04	.18	.17	.12	.09	-.14	.03	-.07	-.10	-.14	-.03	-.09
2. Age		1.00	.06	-.00	-.15	-.07	-.12	.05	.03	.10	.08	.09	.02	-.03	-.06	-.02	.01	.14	.03	.09	.10	.14	.07	.12
3. Index of Social Position			1.00	-.05	-.08	-.09	-.06	-.12	-.06	-.09	-.11	-.12	-.30	-.19	-.14	-.28	-.27	-.28	-.11	-.20	-.19	-.27	-.19	-.26
4. Teacher Rating				1.00	.48	.45	.48	.04	-.01	.04	.05	.03	.25	.34	.17	.34	.28	.21	.25	.25	.12	.19	.30	.29
5. Gilmore Accuracy					1.00	.79	.84	.11	.07	.15	.13	.15	.32	.44	.24	.44	.41	.23	.15	.25	.12	.20	.24	.26
6. Gilmore Comprehension						1.00	.79	.13	.09	.19	.16	.18	.38	.42	.25	.45	.43	.25	.17	.27	.18	.25	.26	.30
7. Gilmore Rate							1.00	.09	.06	.15	.13	.14	.34	.42	.23	.44	.40	.18	.15	.25	.08	.15	.24	.23
8. CAPT -- CM I								1.00	.51	.41	.44	.74	.26	.21	.23	.30	.51	.24	.16	.21	.23	.27	.22	.29
9. CAPT -- CM II									1.00	.53	.45	.83	.24	.24	.21	.30	.54	.16	.09	.13	.22	.22	.13	.20
10. CAPT -- CM III										1.00	.35	.79	.23	.25	.27	.33	.54	.20	.18	.23	.25	.26	.24	.29
11. CAPT -- CM IV											1.00	.69	.27	.23	.22	.31	.50	.20	.13	.18	.16	.21	.19	.23
12. CAPT CM SUBTOTAL												1.00	.32	.30	.30	.40	.68	.26	.17	.23	.28	.31	.24	.32
13. CAPT -- AD I													1.00	.50	.31	.83	.78	.48	.29	.43	.42	.52	.43	.56
14. CAPT -- AD II														1.00	.33	.82	.76	.28	.32	.38	.26	.31	.42	.43
15. CAPT -- AD III															1.00	.63	.61	.30	.27	.26	.29	.34	.32	.38
16. CAPT AD SUBTOTAL																1.00	.94	.46	.38	.48	.43	.52	.51	.60
17. CAPT TOTAL																	1.00	.46	.36	.47	.41	.53	.49	.60
18. SFTAA I																		1.00	.31	.39	.48	.85	.42	.73
19. SFTAA II																			1.00	.43	.34	.38	.83	.72
20. SFTAA III																				1.00	.28	.39	.86	.74
21. SFTAA IV																					1.00	.87	.37	.71
22. SFTAA Language																						1.00	.46	.84
23. SFTAA Non-Language																							1.00	.87
24. SFTAA TOTAL																								1.00

Table 11

CORRELATION MATRIX -- PRETEST SCORES FOR GROUP B
1971-1972

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. Sex	1.00	.00	.06	.18	.09	-.03	.15	-.15	-.15	.04	-.21	-.12	.01	-.03	.09	.02	-.03	-.31	.04	-.10	-.26	-.31	-.04	-.20
2. Age		1.00	.08	.21	.63	.64	.57	.34	.30	.15	.19	.30	.35	.51	.35	.53	.52	.51	.39	.56	.21	.38	.55	.52
3. Index of Social Position			1.00	-.26	.13	.06	.05	.22	.14	-.04	.32	.16	.08	-.01	-.17	-.03	.04	.02	.04	.19	-.03	-.01	.14	.07
4. Teacher Rating				1.00	.22	.28	.43	.13	.22	.1	.26	.23	.17	.24	.05	.21	.25	.24	.26	.17	.13	.20	.23	.24
5. Gilmore Accuracy					1.00	.84	.76	.31	.35	.29	.20	.37	.38	.46	.34	.51	.53	.39	.32	.44	.21	.32	.44	.43
6. Gilmore Comprehension						1.00	.80	.24	.26	.28	.29	.34	.39	.58	.29	.55	.56	.48	.40	.54	.31	.43	.54	.54
7. Gilmore Rate							1.00	.26	.31	.24	.22	.32	.33	.47	.29	.47	.49	.40	.35	.44	.21	.33	.45	.43
8. CAPT -- CM I								1.00	.67	.46	.49	.80	.22	.23	.24	.29	.53	.44	.37	.37	.33	.42	.42	.47
9. CAPT -- CM II									1.00	.50	.49	.88	.34	.38	.32	.44	.68	.39	.36	.37	.23	.34	.41	.42
10. CAPT -- CM III										1.00	.27	.81	.26	.26	.30	.34	.57	.28	.26	.29	.29	.31	.32	.35
11. CAPT -- CM IV											1.00	[illegible]	.27	.36	.04	.31	.48	.40	.37	.33	.38	.42	.40	.46
12. CAPT CM SUBTOTAL												1.00	.34	.38	.31	.44	.73	.46	.42	.43	.38	.46	.48	.52
13. CAPT -- AD I													1.00	.56	.38	.83	.77	.34	.35	.47	.24	.32	.47	.44
14. CAPT -- AD II														1.00	.30	.84	.79	.45	.47	.59	.30	.41	.61	.56
15. CAPT -- AD III															1.00	.67	.63	.30	.27	.27	-.01	.15	.30	.26
16. CAPT AD SUBTOTAL																1.00	.94	.48	.47	.58	.24	.39	.60	.55
17. CAPT TOTAL																	1.00	.54	.52	.61	.33	.47	.65	.63
18. SFTAA I																		1.00	.50	.63	.66	.90	.65	.87
19. SFTAA II																			1.00	.56	.30	.43	.86	.72
20. SFTAA III																				1.00	.50	.61	.90	.85
21. SFTAA IV																					1.00	.92	.46	.77
22. SFTAA Language																						1.00	.60	.90
23. SFTAA Non-Language																							1.00	.89

Table 12

CORRELATION MATRICES FOR PRE-POST CAPT AND INTERIM REVIEW TESTS

CAPT

AD Subtests

	PRE	IRT 1	IRT 2	IRT 3	IRT 4	POST
PRE	-	.51	.49	.41	.44	.62
IRT 1		-	.24	.30	.24	.42
IRT 2			-	-.19	.37	.20
IRT 3				-	.15	.40
IRT 4					-	.50
POST						-

CAPT

CM Subtests

	PRE	IRT 1	IRT 2	IRT 3	IRT 4	POST
PRE	-	.43	-.07	.35	.24	.58
IRT 1		-	-.19	.34	.13	.30
IRT 2				-.36	-.18	.12
IRT 3				-	.02	.27
IRT 4					-	.39
POST						-

CAPT Total

	PRE	IRT 1	IRT 2	IRT 3	IRT 4	POST
PRE	-	.20	.33	.37	.40	.68
IRT 1		-	-.52	-.34	-.34	.06
IRT 2			-	.10	.33	.26
IRT 3				-	.57	.48
IRT 4					-	.58
POST						-

Table 13

ROTATED FACTOR MATRIX (3 FACTORS)

	Variables	Factor I	Factor II	Factor III
1.	Teacher Rating Scale	.62080	-0.10850	.25635
2.	Gilmore Accuracy	.91093	.08425	.10462
3.	Gilmore Comprehension	.87089	.11653	.14380
4.	Gilmore Rate	.91910	.07679	.07488
5.	CM I	.01855	.73609	.18649
6.	CM II	-0.00807	.83106	.07909
7.	CM III	.08514	.71457	.17626
8.	CM IV	.08902	.69469	.12045
9.	AD I	.29601	.22973	.63237
10.	AD II	.47573	.23354	.44549
11.	AD III	.19892	.27581	.44415
12.	SFTAA I	.10781	.12886	.71226
13.	SFTAA II	.08438	.00583	.68242
14.	SFTAA III	.20613	.09124	.65841
15.	SFTAA IV	-0.02608	.17166	.70159

Table 14

ROTATED FACTOR MATRIX (4 FACTORS)

Variables	Factor I	Factor II	Factor III	Factor IV
1. Teacher Rating Scale	.59604	-0.08285	.02282	.38854
2. Gilmore Accuracy	.91393	.07243	.11691	.05228
3. Gilmore Comprehension	.87681	.10034	.17880	.03849
4. Gilmore Rate	.91959	.06906	.06674	.06543
5. CM I	.01993	.73759	.16306	.08442
6. CM II	-0.00130	.82791	.10632	-0.01676
7. CM III	.08309	.72057	.12342	.11739
8. CM IV	.08719	.70123	.07327	.09060
9. AD I	.29876	.21387	.61169	.26374
10. AD II	.45419	.25527	.21898	.43991
11. AD III	.19427	.27539	.36756	.25526
12. SFTAA I	.12220	.09492	.79468	.16894
13. SFTAA II	.03405	.06525	.19803	.81910
14. SFTAA III	.16823	.13309	.28172	.68729
15. SFTAA IV	-0.00932	.13582	.80496	.13557

Table 15

ROTATED FACTOR MATRIX (5 FACTORS)

	Variables	Factor I	Factor II	Factor III	Factor IV	Factor V
1.	Teacher Tating Scale	.59857	-0.07626	.02862	.39402	-0.03636
2.	Gilmore Accuracy	.91389	.06301	.09957	.04602	.07707
3.	Gilmore Comprehension	.87695	.08966	.15888	.03124	.09748
4.	Gilmore Rate	.91945	.06061	.05130	.05995	.06267
5.	CM I	.02646	.74920	.16881	.09357	.00583
6.	CM II	.00098	.81952	.08587	-0.02232	.13251
7.	CM III	.07926	.68145	.06197	.08919	.33850
8.	CM IV	.09588	.72668	.09878	.11007	-0.10487
9.	AD I	.30925	.23884	.63284	.28223	-0.04350
10.	AD II	.45619	.24640	.19849	.43404	.12805
11.	AD III	.17594	.16347	.20934	.17290	.83882
12.	SFTAA I	.13064	.10827	.80006	.17839	.05370
13.	SFTAA II	.03319	.04370	.16190	.80364	.21970
14.	SFTAA III	.17586	.15094	.29665	.70093	-0.03377
15.	SFTAA IV	-0.00624	.12225	.77447	.12506	.23886

Table 16

MEAN PERCENT OF ITEMS CORRECT ON INTERIM REVIEW TESTS FOR GROUPS A AND B

Interim Review Test	Group A Mean	Group B Mean
Set 1	81	83
Set 2	80	80
Set 3	81	86
Set 4	70	75

Table 17

MEAN PERCENT OF ITEMS CORRECT ON SET 1, BY GROUP A SCHOOLS

School	Lesson Number									IRT		
Code	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	CM	AD	Total
AX01	87	67	77	92	83	90	90	63	57	75	65	76
AX03	92	77	66	94	82	93	60	93	72	78	72	83
AX05	98	83	85	99	86	95	92	55	73	91	76	85
AX07	76	43	20	81	59	69	67	22	23	55	59	69
AX09	96	84	75	98	77	90	94	41	55	91	77	87
AX11	90	71	72	96	83	86	90	46	54	88	74	83

Table 18

PERCENTAGE REACHING CRITERION (80%) ON SET 1, BY GROUP A SCHOOLS

School	Lesson Number									IRT		
Code	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	CM	AD	Total
AX01	92	40	56	90	72	75	91	33	20	52	28	32
AX03	98	48	52	96	72	98	88	33	44	63	27	73
AX05	96	56	77	100	76	100	98	23	40	97	43	83
AX07	56	0	18	65	34	27	30	0	0	26	6	12
AX09	98	63	72	100	50	92	100	8	28	92	48	81
AX11	84	50	63	100	73	83	91	7	11	84	21	64

APPENDIX B

Student Behavioral Objectives for APT lessons

STUDENT BEHAVIORAL OBJECTIVES FOR APT LESSONS

1.0 By the end of Set 1.0, the child will be able to do the following tasks:

1.1 Given tape-recorded presentations of six noisemakers, presented two, three, or four at a time in varying sequences, the child will choose the correct order of presentation by making an X on the appropriate box in his Listening Book. The sounds will be presented within sequences without pauses, and four seconds will be allowed between sequences for response.

1.2 Given minimal pairs of one-syllable words containing contrasts of the vowels short i, short e, and short a, the child will identify the correct vowels by making an X in the appropriate box in his Listening Book.

1.3 Given a series of tape-recorded instructions, which include words with the phonemes /s/, /z/, /k/, /r/, and /ee/, in initial, medial, and final positions, the child will correctly identify the word containing the designated sound by drawing a circle around the appropriate picture in his Listening Book.

Choices will be made under the following conditions of presentation:

1.3.1 When the sound is presented in isolation.

1.3.2 When the sound is presented in nonsense words of one or two syllables.

1.3.3 When the sound is presented in real words of two syllables.

1.3.4 When the sound is presented in one or more words within a sentence.

1.3.5 When the sound is presented in a context in which it could be mistaken for a similar sound.

2.0 By the end of Set 2.0, the child will be able to do the following tasks:

2.1 Given a series of tape-recorded directions spoken by five different speakers--2 men, 2 women, and 1 child--with distinct vocal characteristics, the child will make an appropriate response to the designated speaker. Directions will be given by either three or four speakers speaking successively. Responses will consist of choosing the correct picture from rows of 5 pictures by making a specified mark.

2.2 Given the tape-recorded presentation of words of one to four syllables, in which certain sounds have been systematically omitted, the child will identify the word by drawing a circle around the correct picture in his Listening Book, when the set of pictures from which he may choose includes words with similar sounds. The sounds will be systematically omitted from initial, middle, and final positions in the words.

2.3 Given the tape-recorded presentation of one to four syllable words in which the sounds of the words are spoken individually at intervals of one to three seconds, the child will correctly identify the word by drawing a circle around the appropriate picture.

2.4 Given a sentence with a complex intonational pattern, the child will identify the correct pattern by making an X on a picture representing the intonation curve, from a choice of two pictures.

2.5 Given a series of speech sounds presented in isolation, from two to five at a time, the child will identify the correct order of presentation by making an X on the appropriate box in his Listening Book.

3.0 By the end of Set 3.0, the child will be able to do the following tasks:

3.1 Given tape-recorded utterances of nonsense syllables, words, phrases, and sentences, the child will correctly identify:

3.1.1 The number of sounds in one-syllable words.

3.1.2 The number of syllables in words of two to six syllables.

3.1.3 The number of syllables in a phrase.

3.1.4 The number of syllables in a sentence.

The responses will be made by circling the correct number from a series of numbers presented in rows in his Listening Book, or making an X in the appropriate box.

3.2 Given two speakers uttering similar directions simultaneously, the child will respond to the designated speaker by making the designated mark on one picture in a row of five. The difficulty of the distraction will be varied in three ways: (1) similarity of voices, (2) similarity of directions, and (3) similarity of loudness.

By the end of the set, the child will respond correctly to the designated speaker's voice when the distracting voice is softer or of equal loudness.

4.0 By the end of Set 4.0, the child will be able to do the following tasks:

4.1 Given two speakers speaking simultaneously, the child will respond correctly to the directions of the designated speaker when the distracting speaker is giving similar directions under the following conditions:

4.1.1 When the distracting voice is of equal or greater loudness than the designated voice.

4.1.2 When the designated speaker is switched frequently within the lesson.

4.1.3 When the voices are similar in quality, e.g., two men, two women.

4.2 Given the taped presentation of a series of language tasks, the child will be able to identify and discriminate between a specific number of syntactical categories (singular-plural nouns, verb tenses and voices, and prepositions) and select appropriate grammatical (conceptual) categories.

APPENDIX C

Class and Composite Profiles of Progress for Groups A and B

Figure 1

Composite Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group A

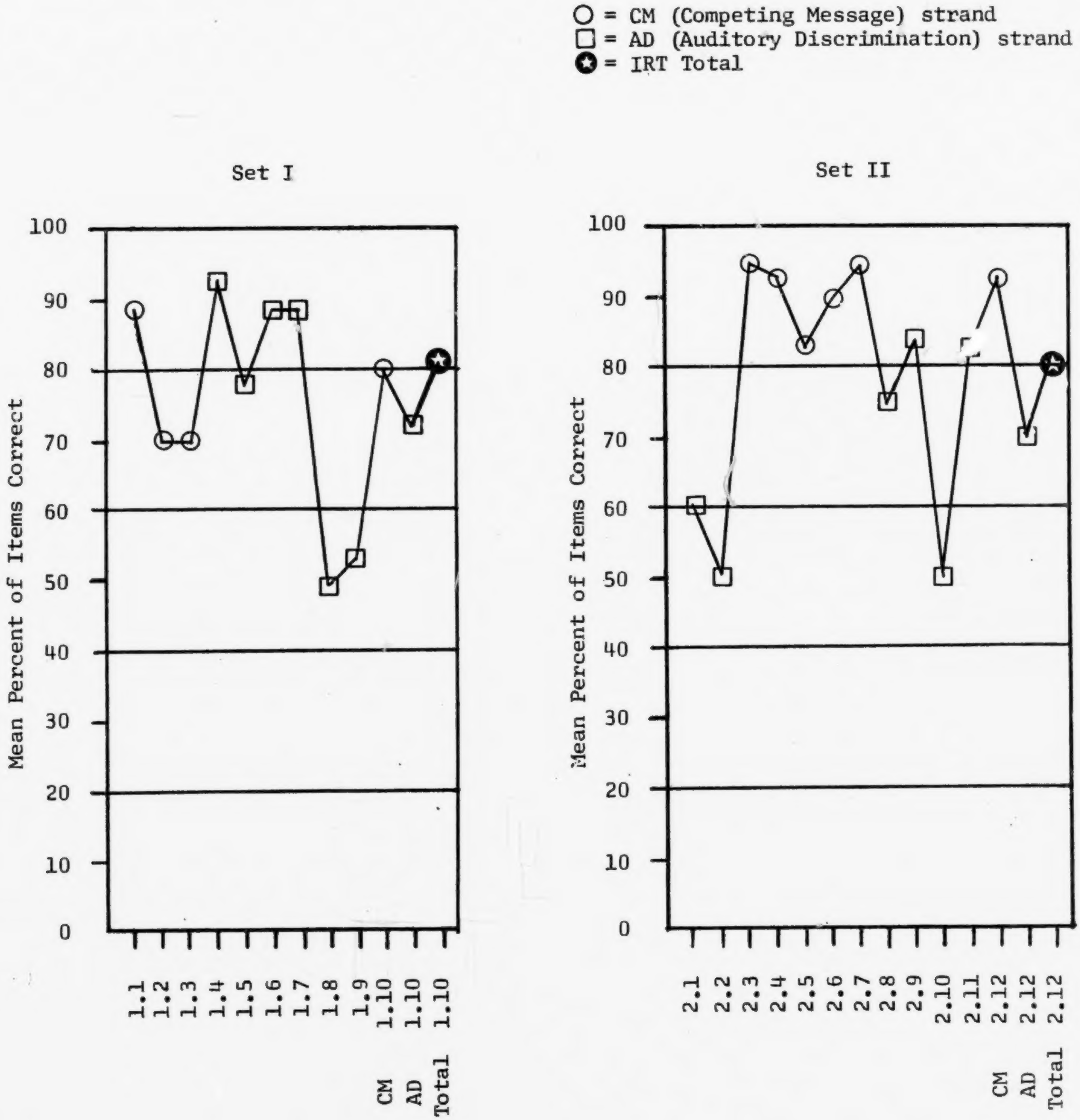


Figure 2

Composite Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group A

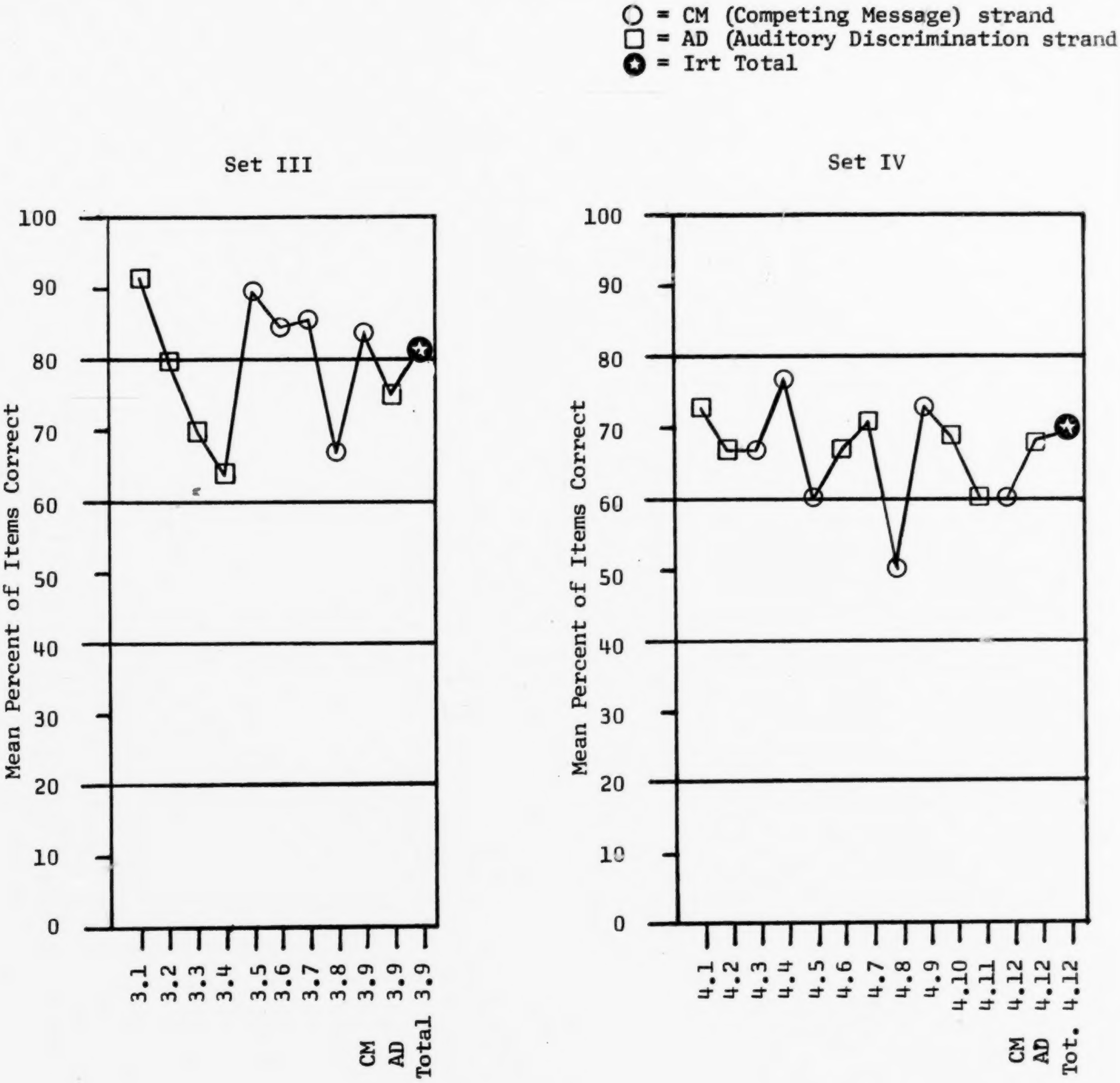


Figure 3

Composite Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group B

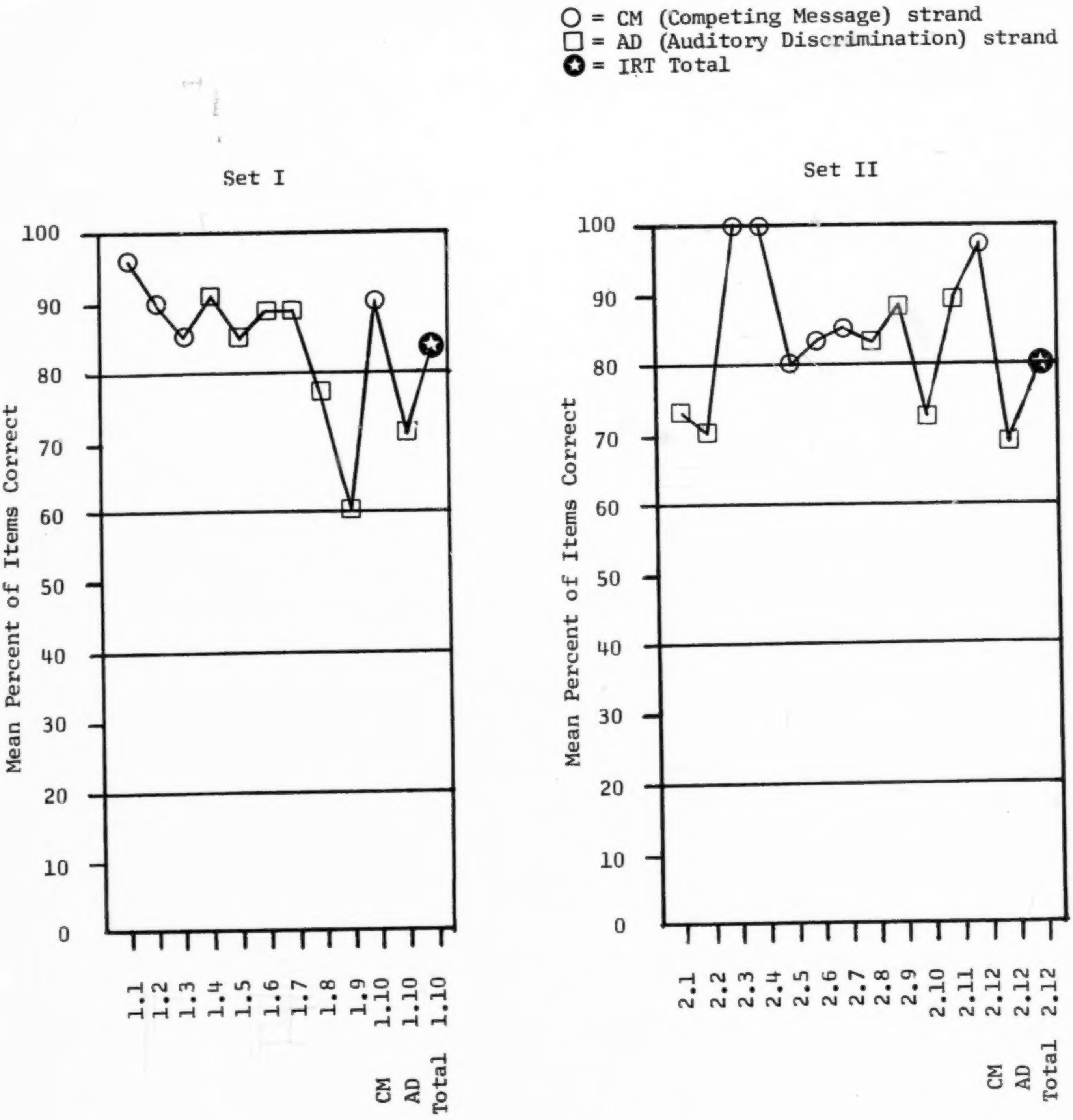


Figure 4

Composite Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group B

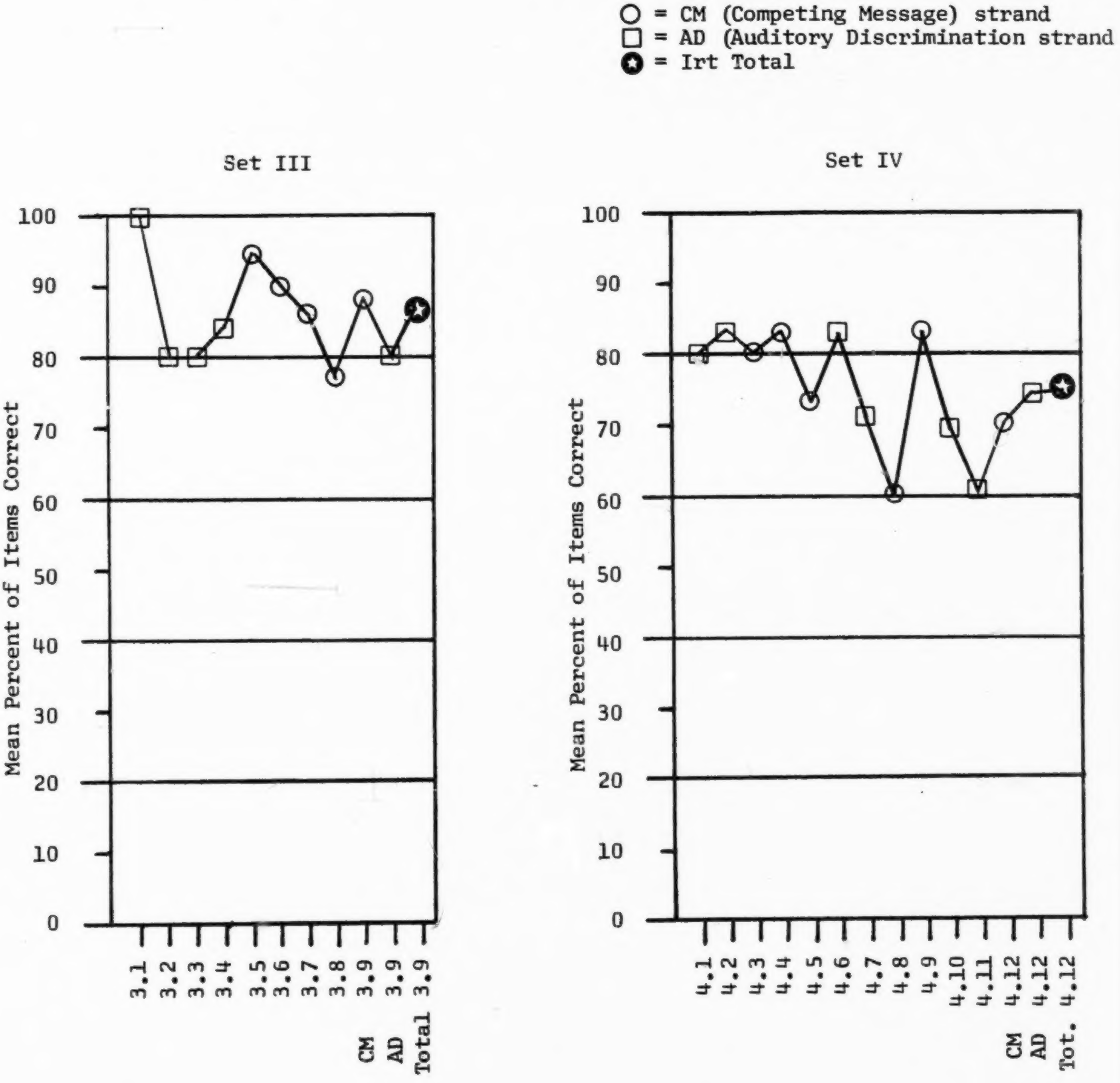


Figure 5

Separate Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group A

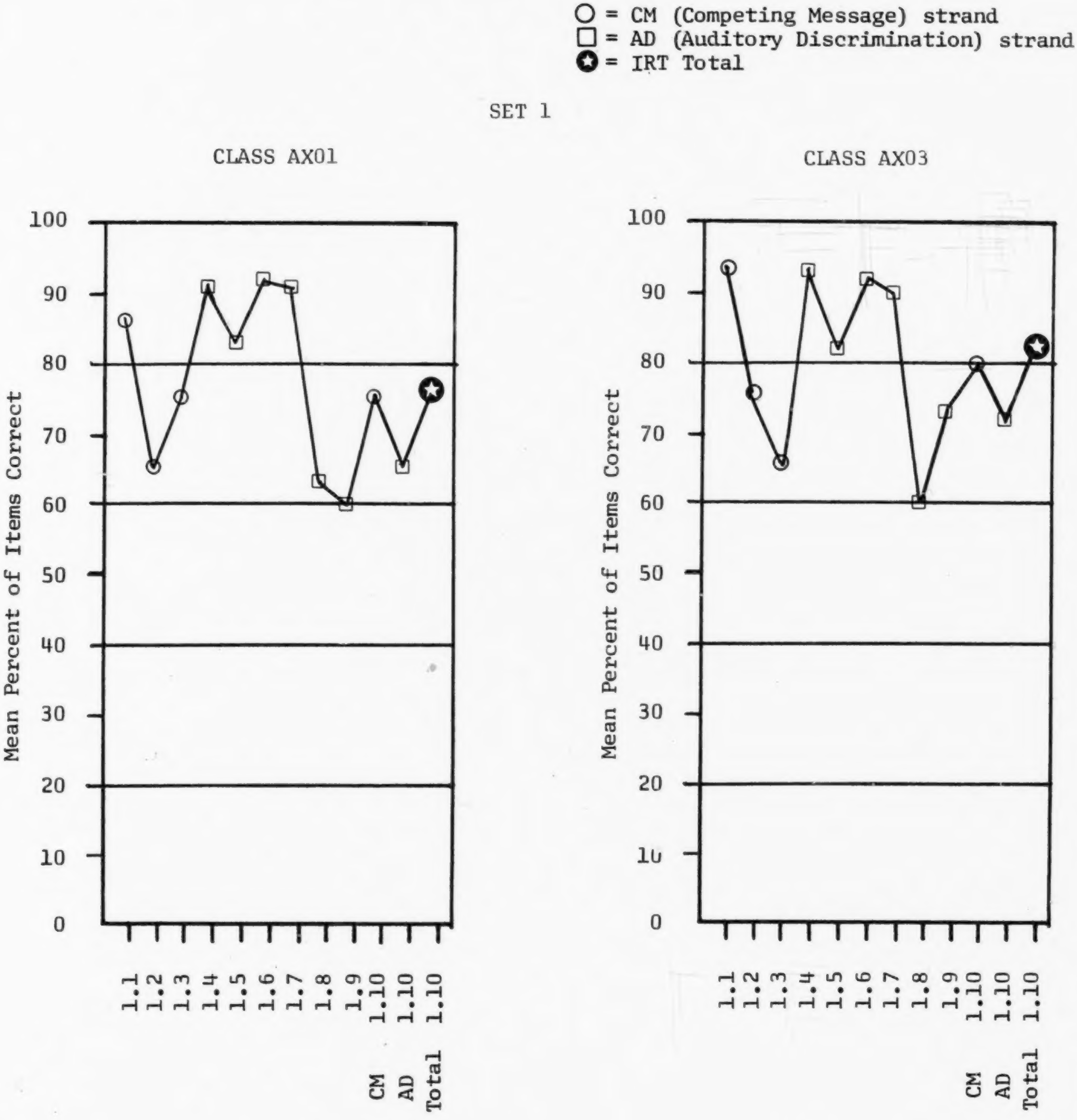


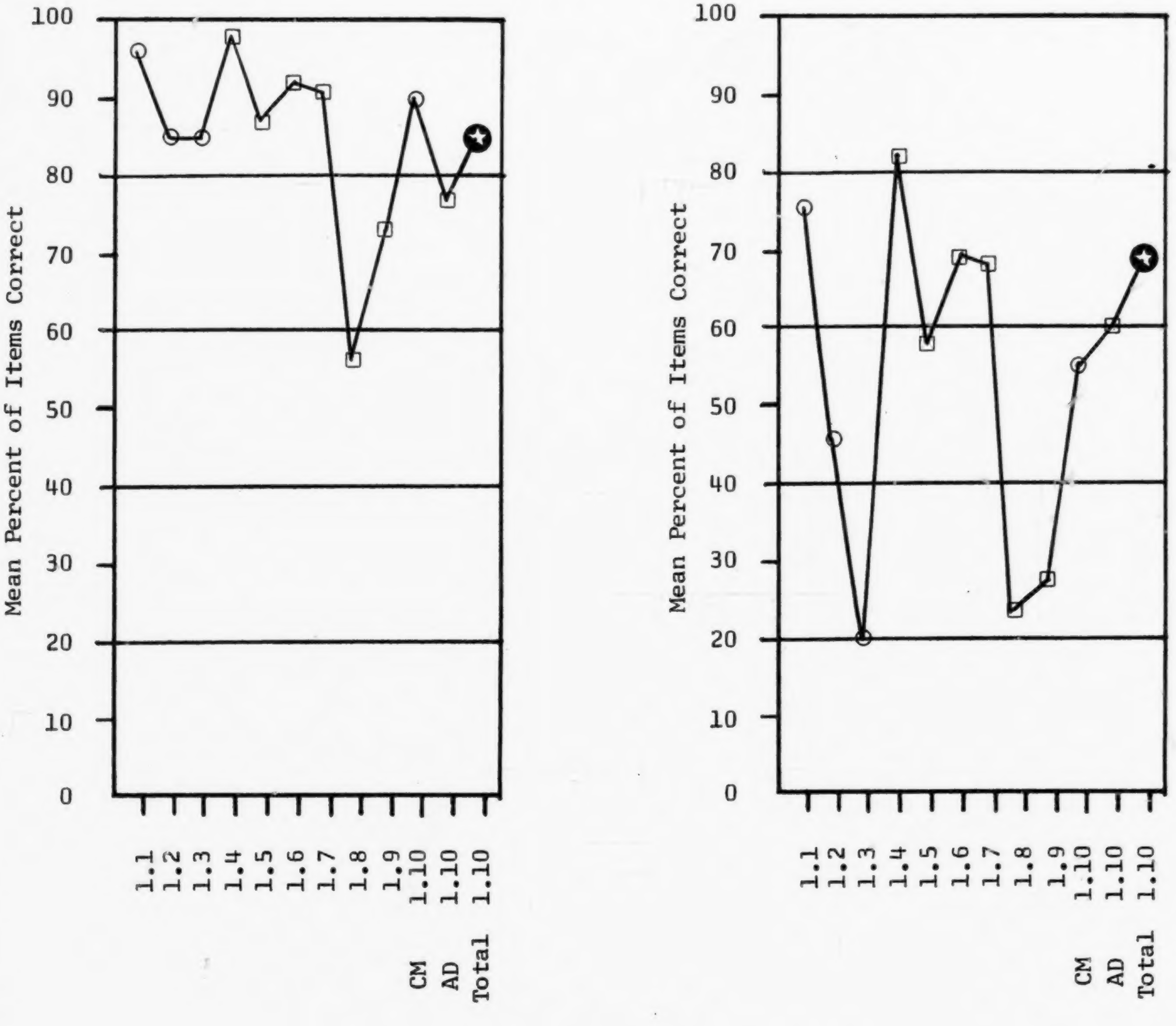
Figure 6

Separate Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group A

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

SET 1



CLASS AX05

CLASS AX07

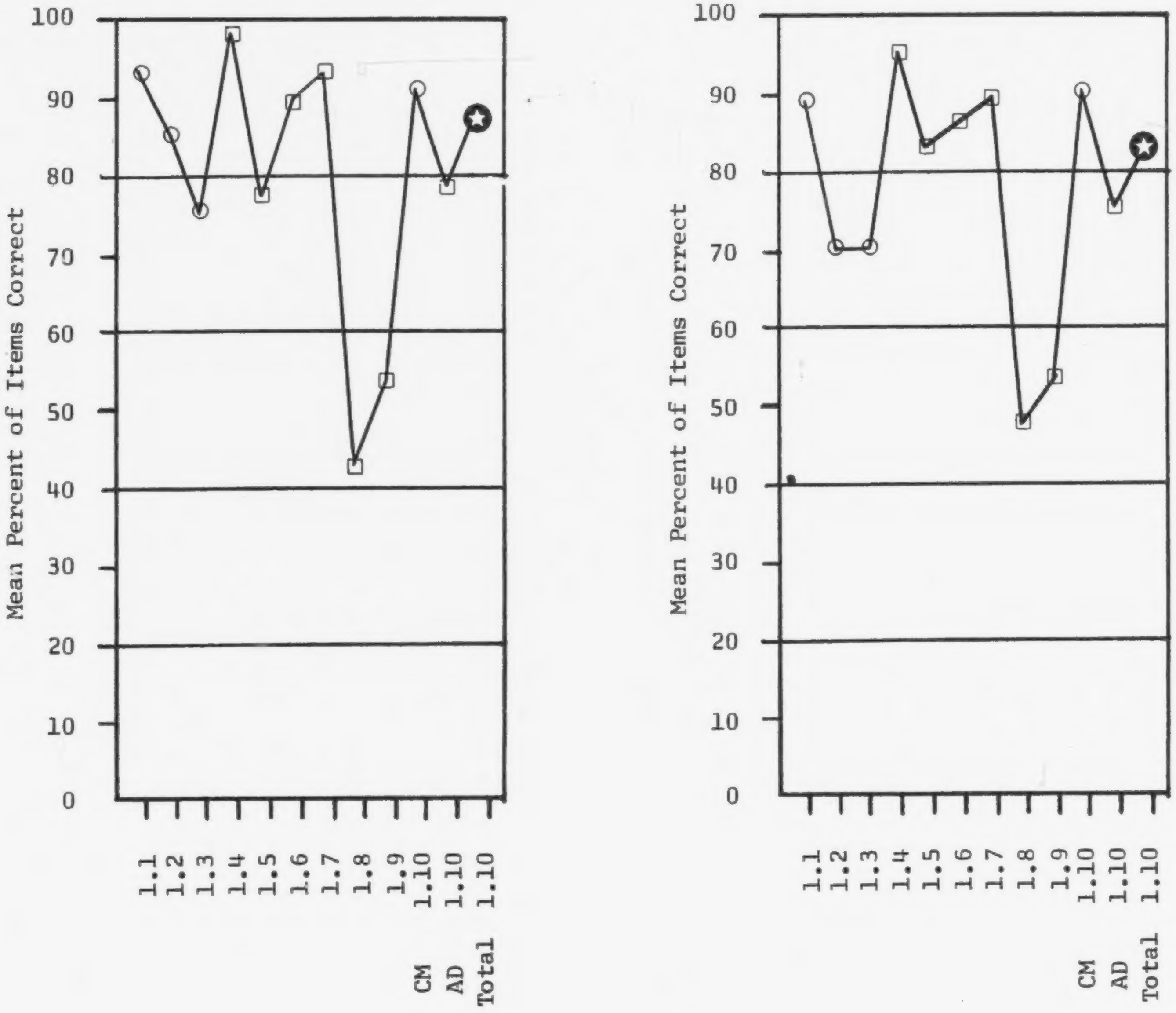
Figure 7

Separate Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group A

○ = CM (Competing Message) strand
☐ = AD (Auditory Discrimination) strand
✪ = IRT Total

SET 1


CLASS AX09

CLASS AX11

Figure 8

Separate Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group B

○ = CM (Competing Message) strand
☐ = AD (Auditory Discrimination) strand
✪ = IRT Total

SET 1

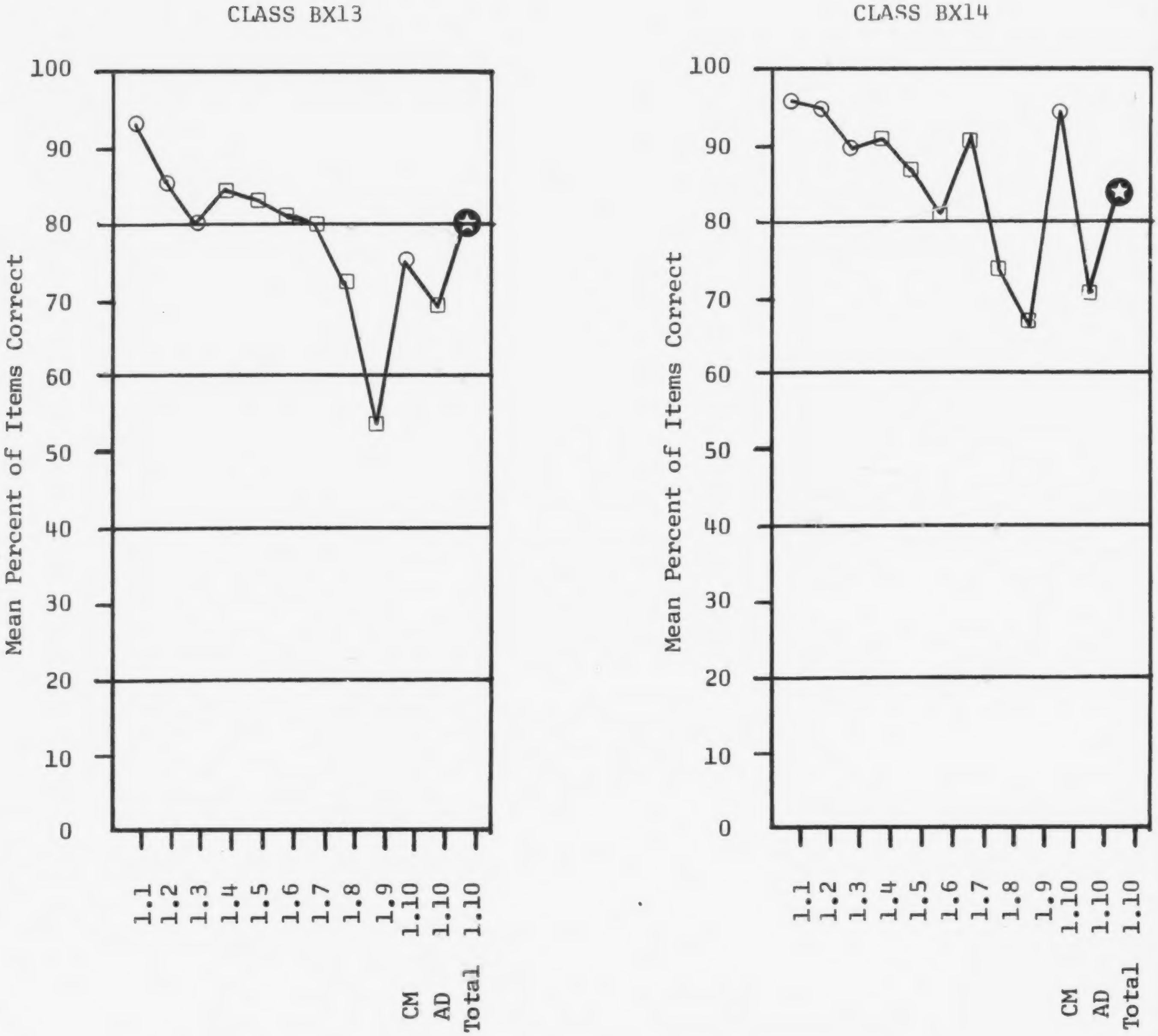


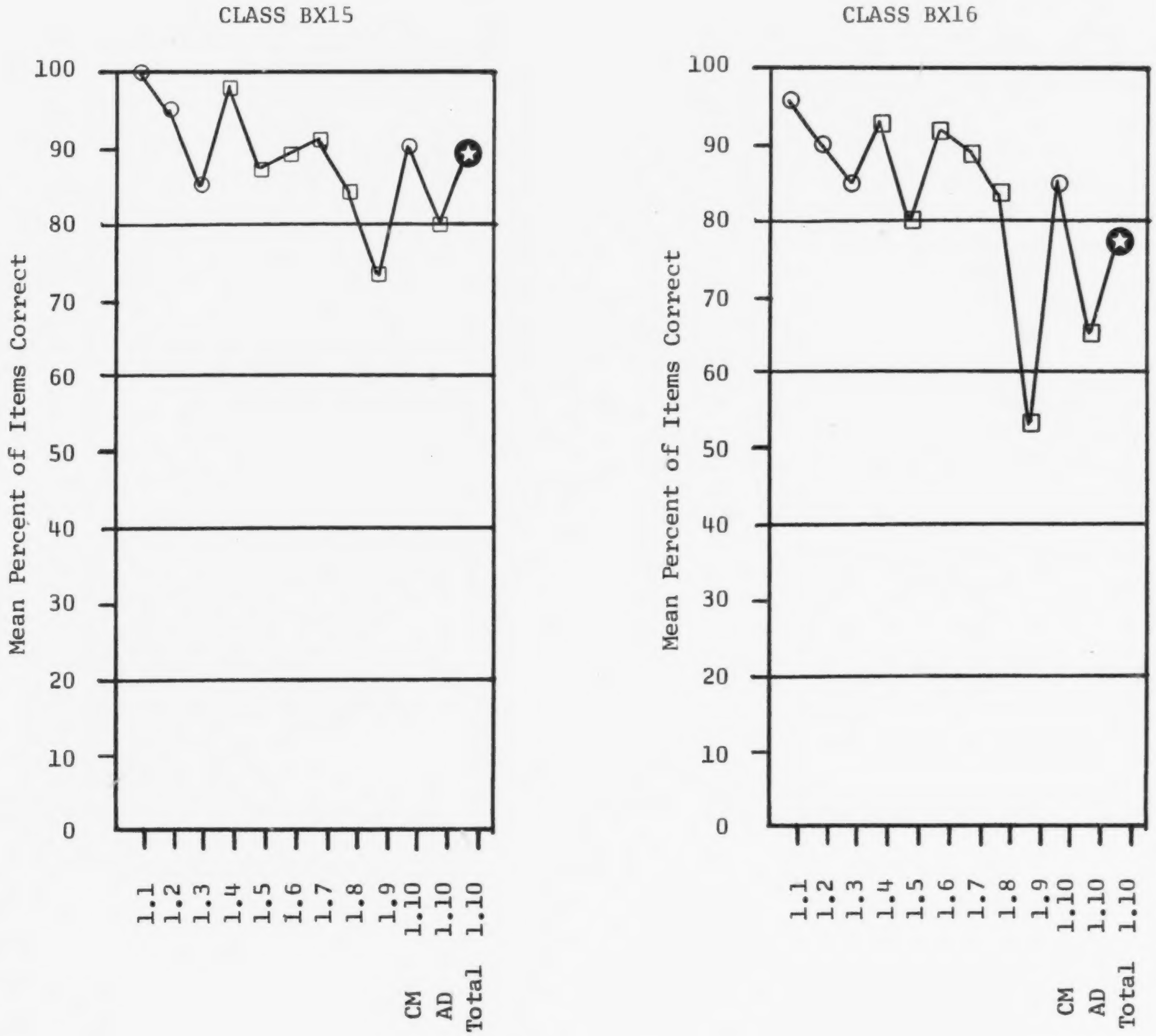
Figure 9

Separate Class Profiles
APT Lessons and Interim Review Tests (IRT)

Group B

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

SET 1



APPENDIX D

Selected Individual Student Profiles from Subsample

Figure 10

MATRIX OF INITIAL READING AND LISTENING ABILITIES FOR SELECTION OF SUBSAMPLE

SCORES ON ORAL READING ACCURACY		0 - 127 Poor Listener	128 - 147 Average Listener	148 - 212 Good Listener
Good Reader	21-43	7	8	9
Average Reader	14-20	4	5	6
Poor Reader	0-13	1	2	3

CAPT Total Scores

Figure 11

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

LEGEND:

x —— - PRETEST

o - - - - - POSTTEST

AX-0301
Cell #1

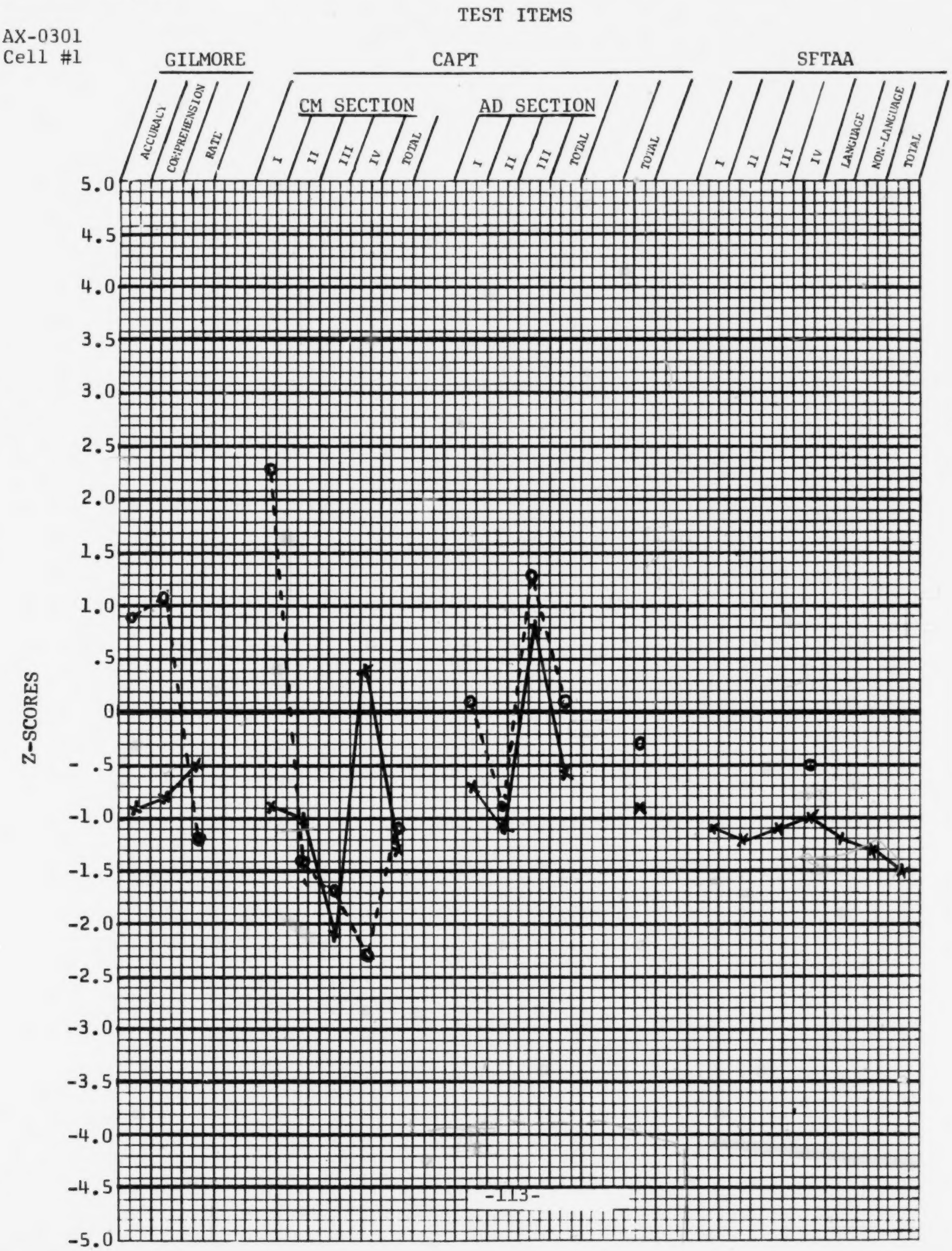


Figure 11a

Individual Student Profile

Matrix Cell No. 1 --AX-0301

○ = CM (Competing Message) strand
☐ = AD (Auditory Discrimination) strand
✪ = IRT Total

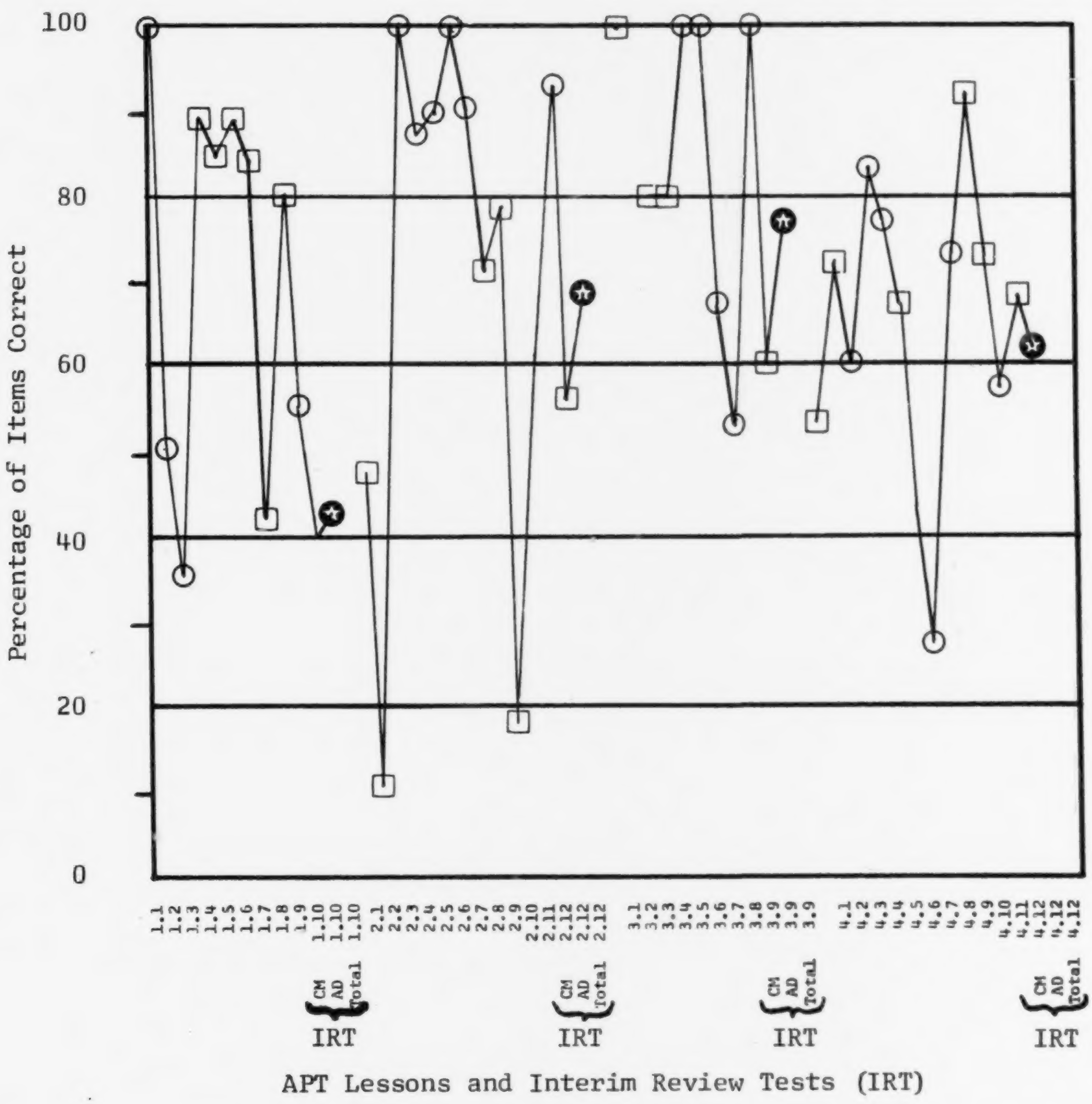


Figure 12

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

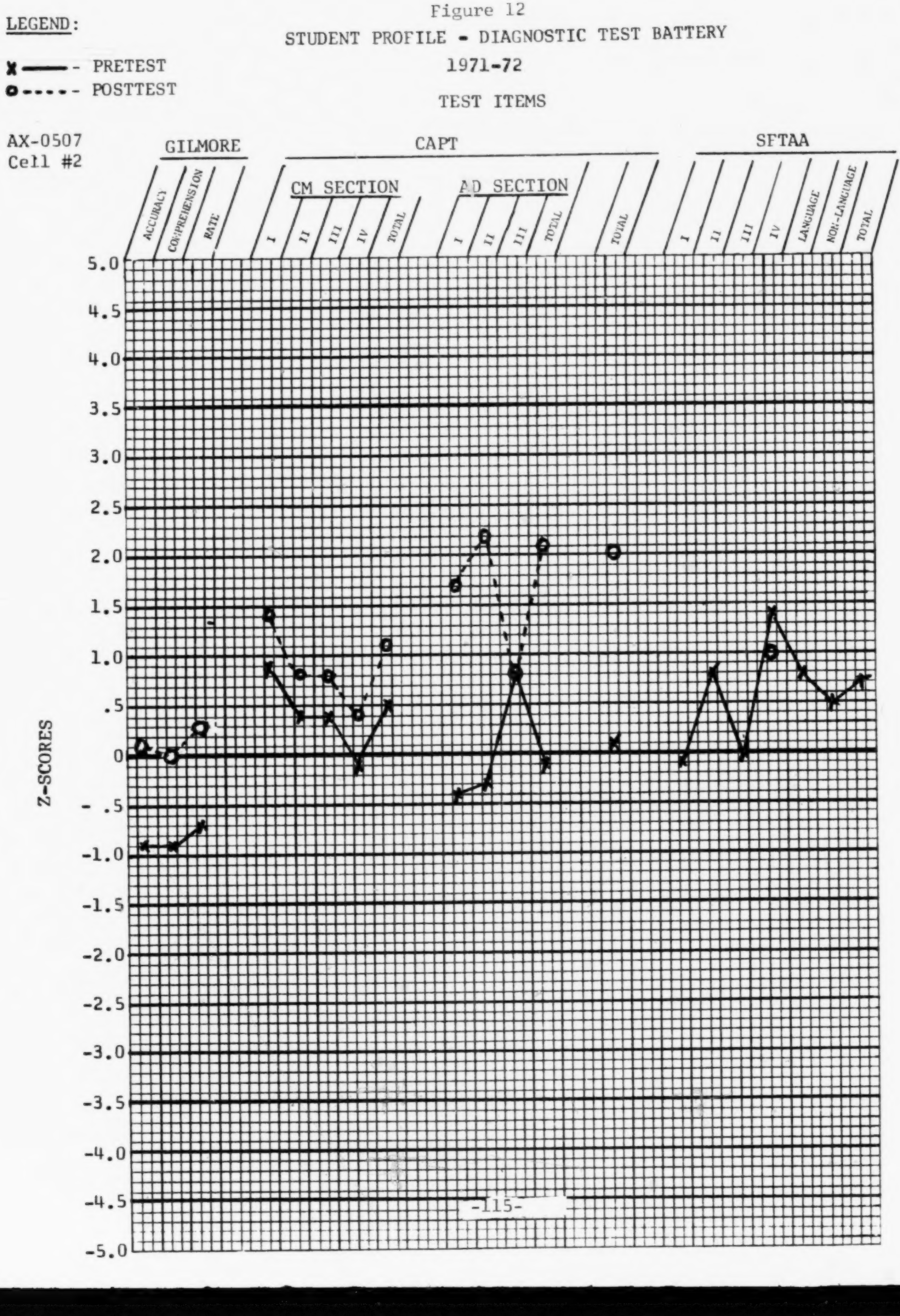


Figure 12a

Individual Student Profile

Matrix Cell No. 2 -- AX-0507

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

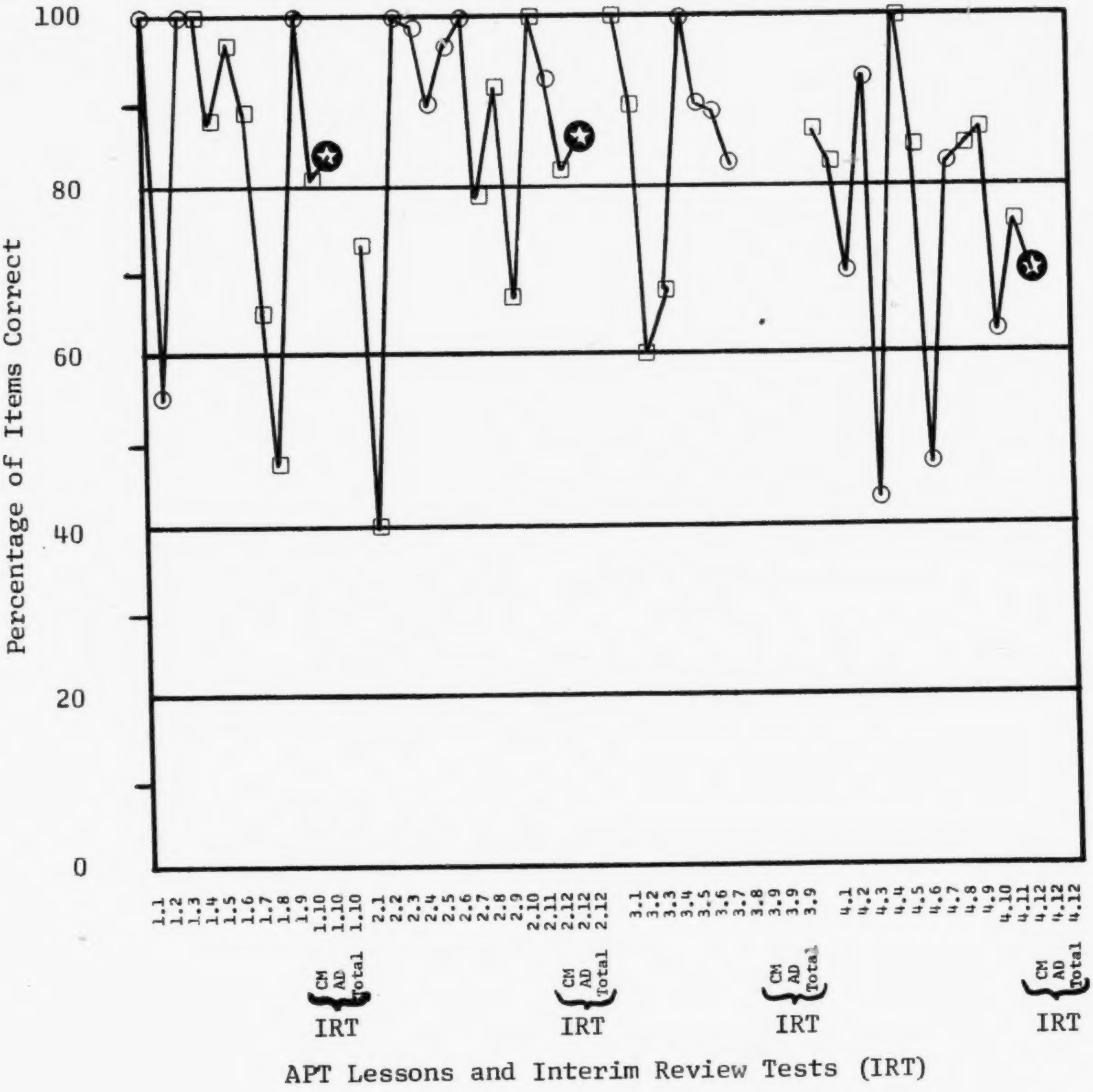


Figure 13

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

TEST ITEMS

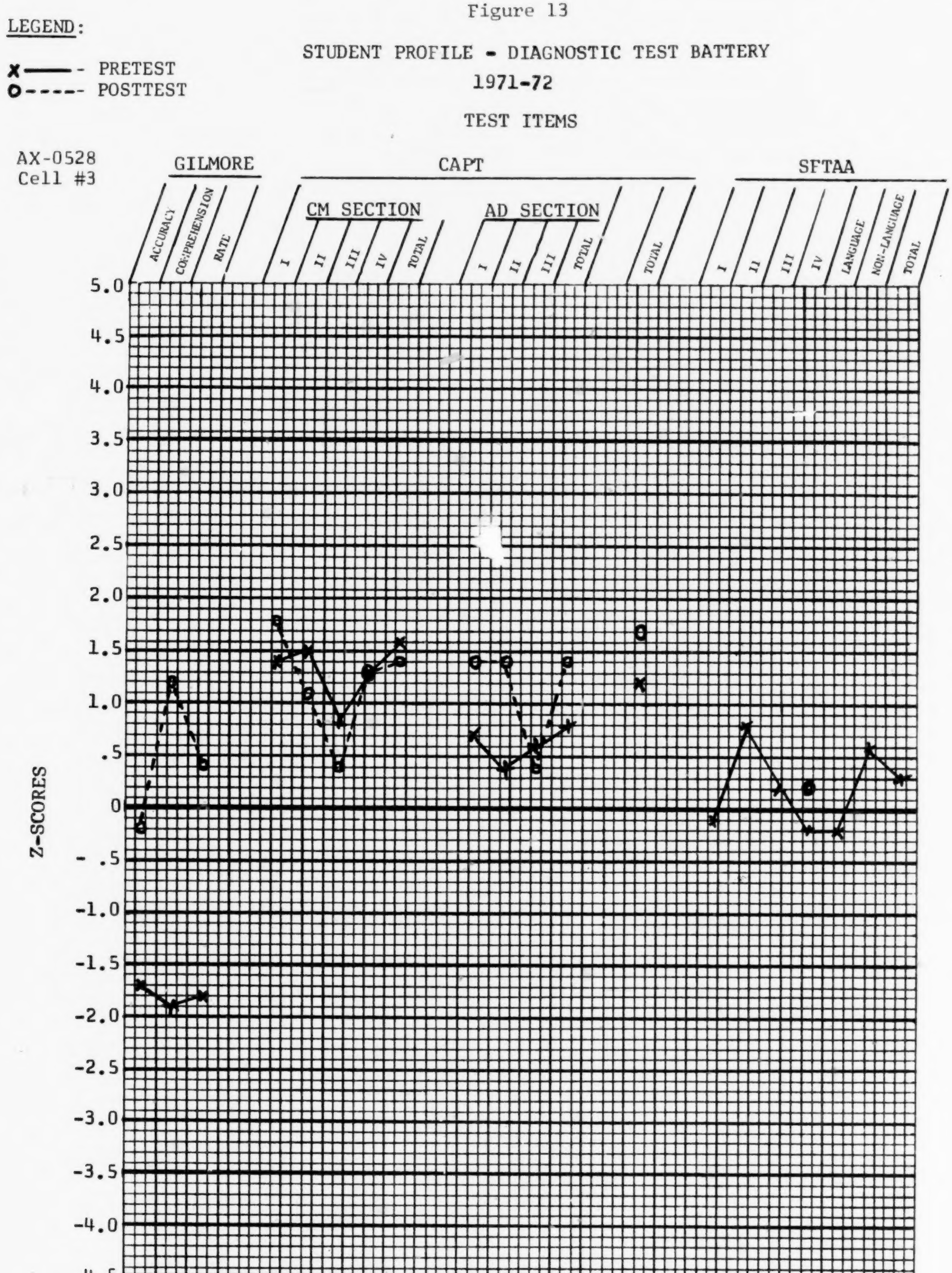


Figure 13a

Individual Student Profile

Matrix Cell No. 3 -- AX-0528

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

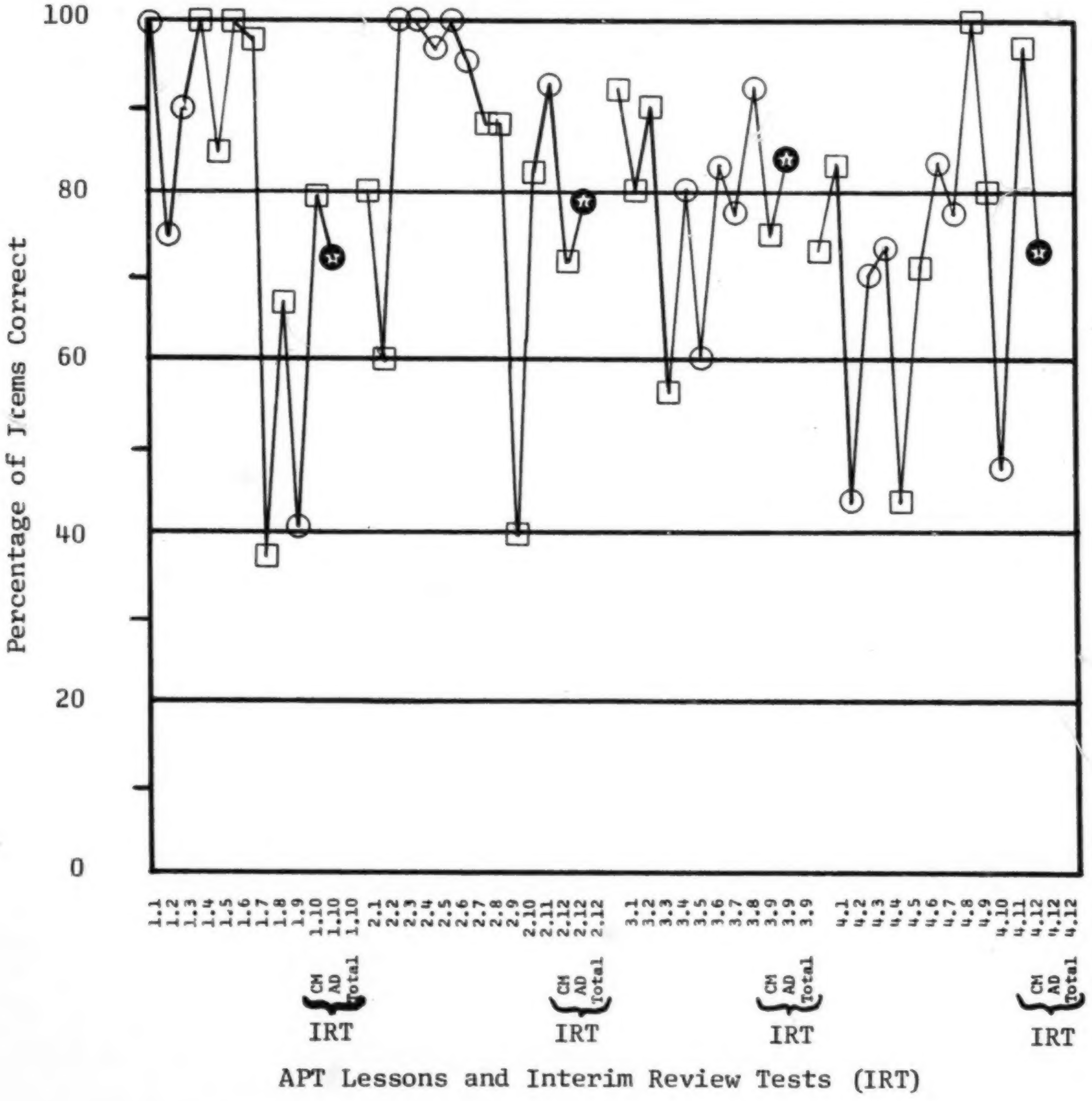


Figure 14

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

LEGEND:

x——— - PRETEST
o- - - - - POSTTEST

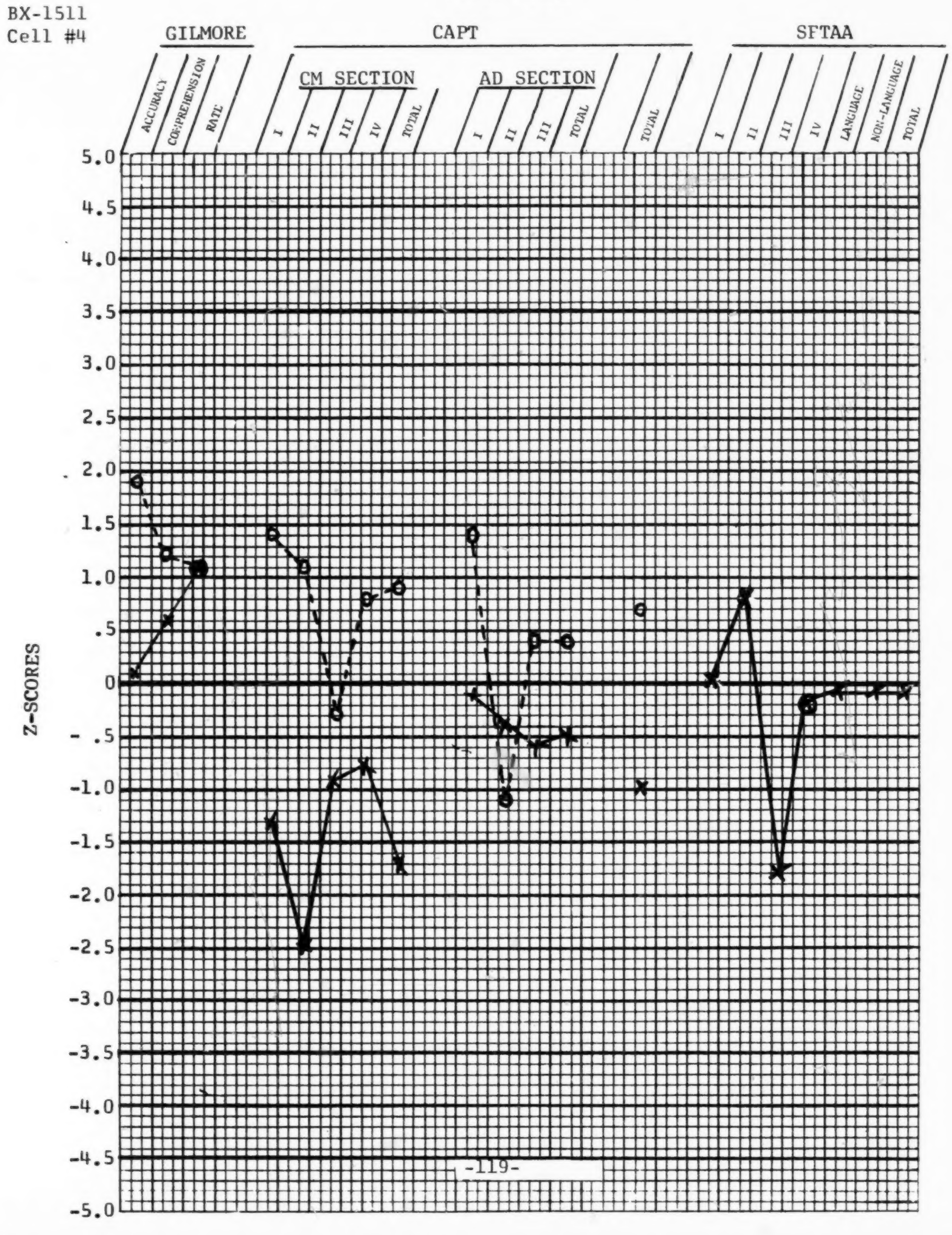


Figure 14a

Individual Student Profile

Matrix Cell No. 4 -- BX-1511

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

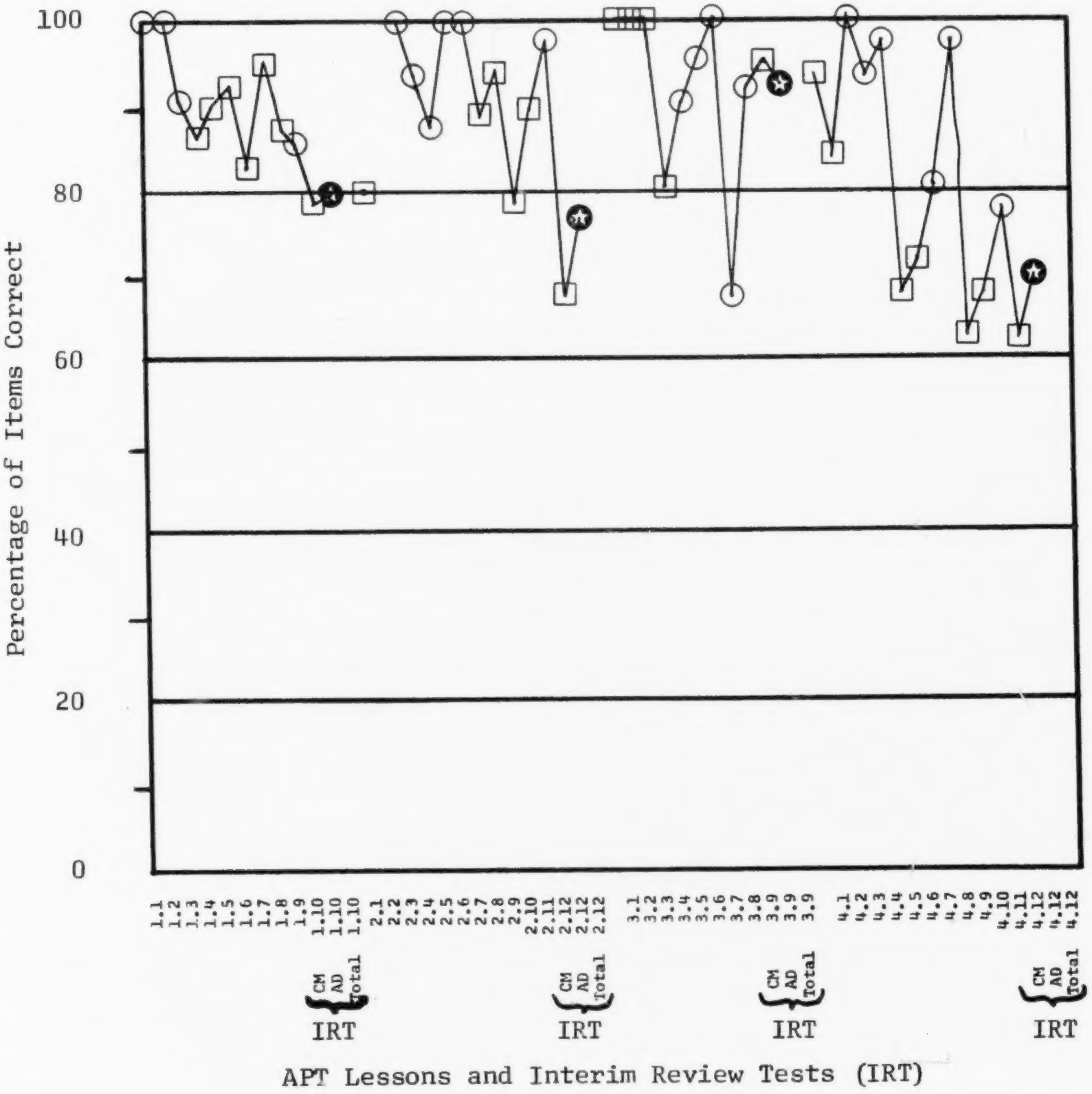


Figure 15

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

TEST ITEMS

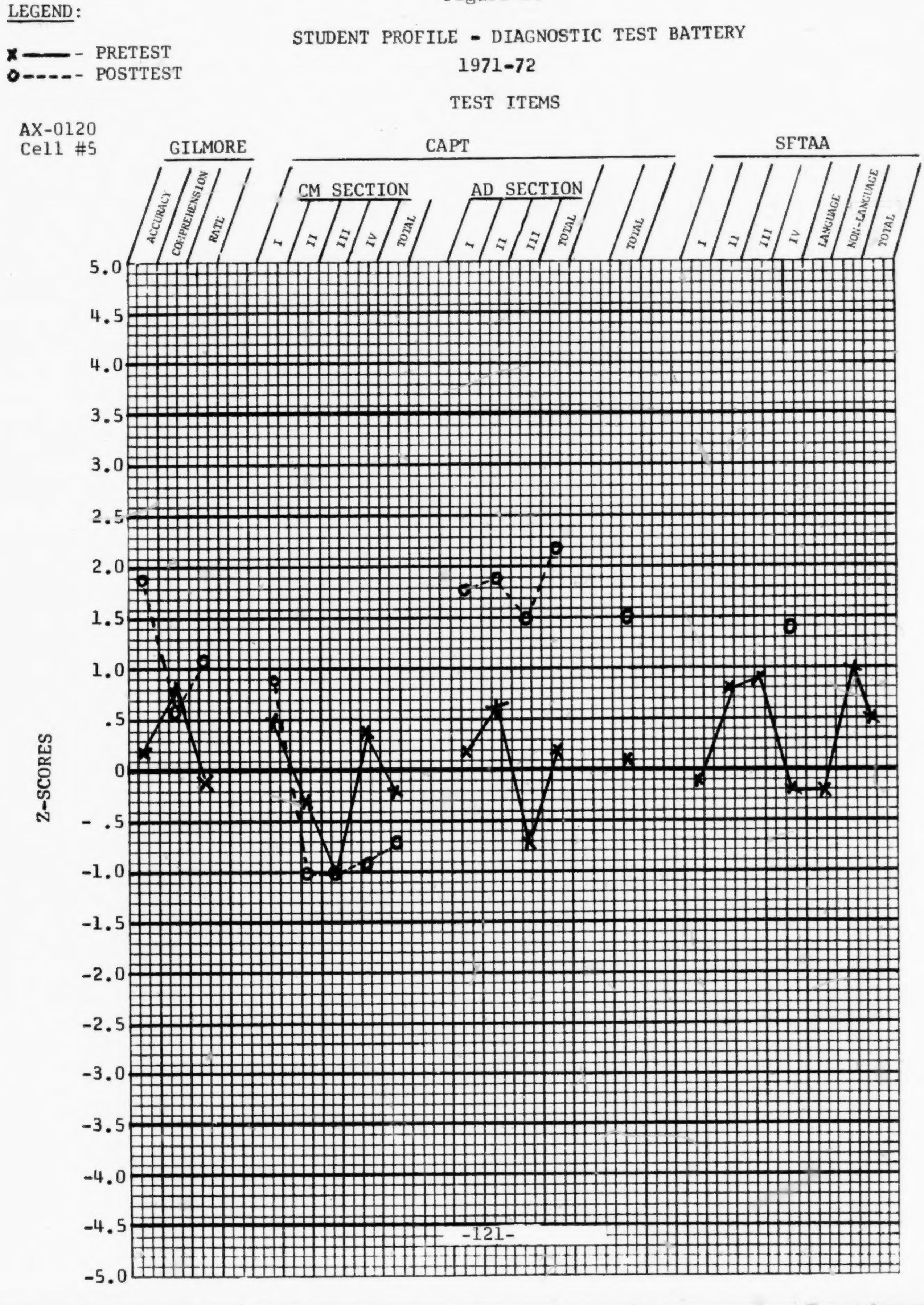


Figure 15a

Individual Student Profile

Matrix Cell No. 5 -- AX-0120

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

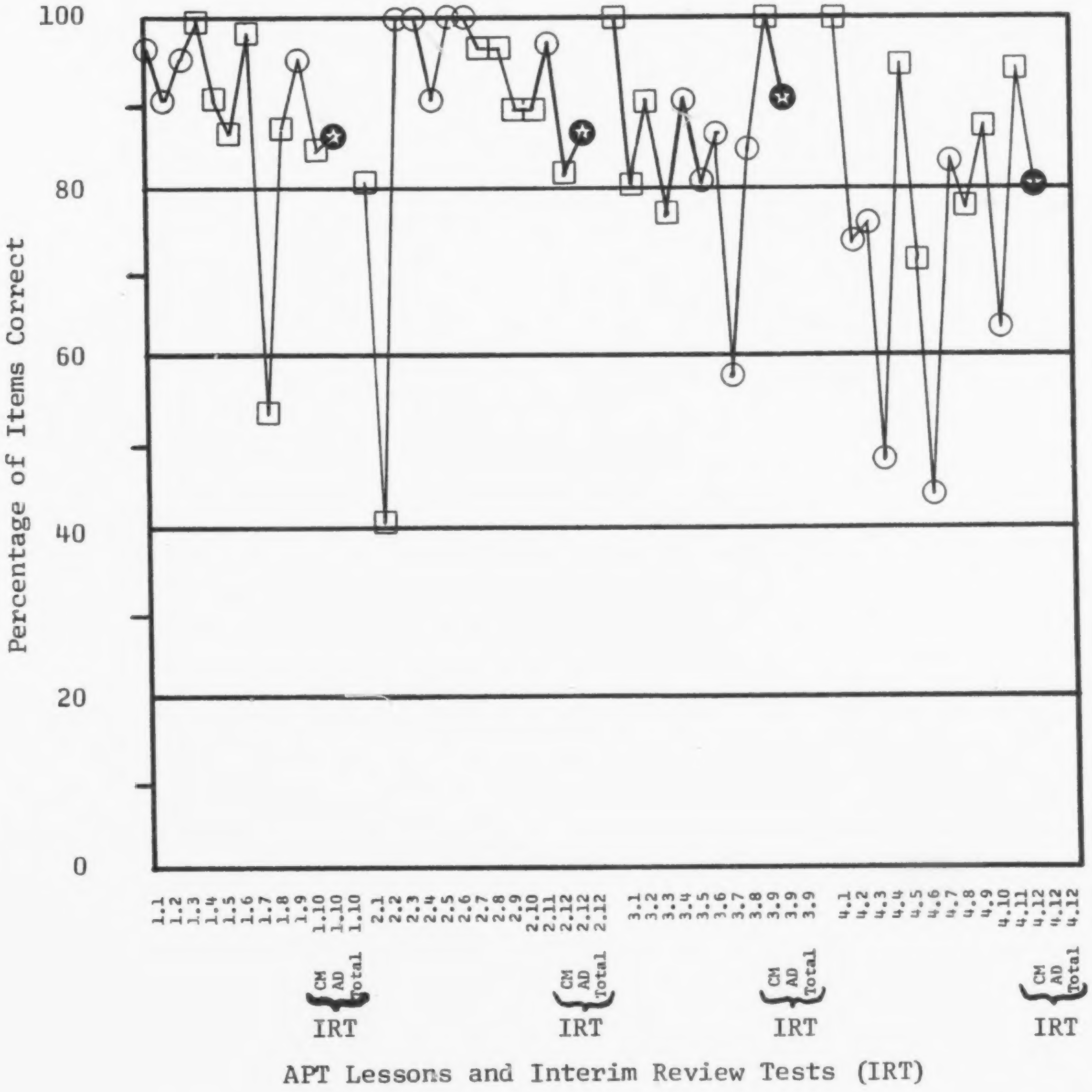


Figure 16

LEGEND:

x ——— - PRETEST
o ----- POSTTEST

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY
1971-72

TEST ITEMS

BX-1519
Cell #6

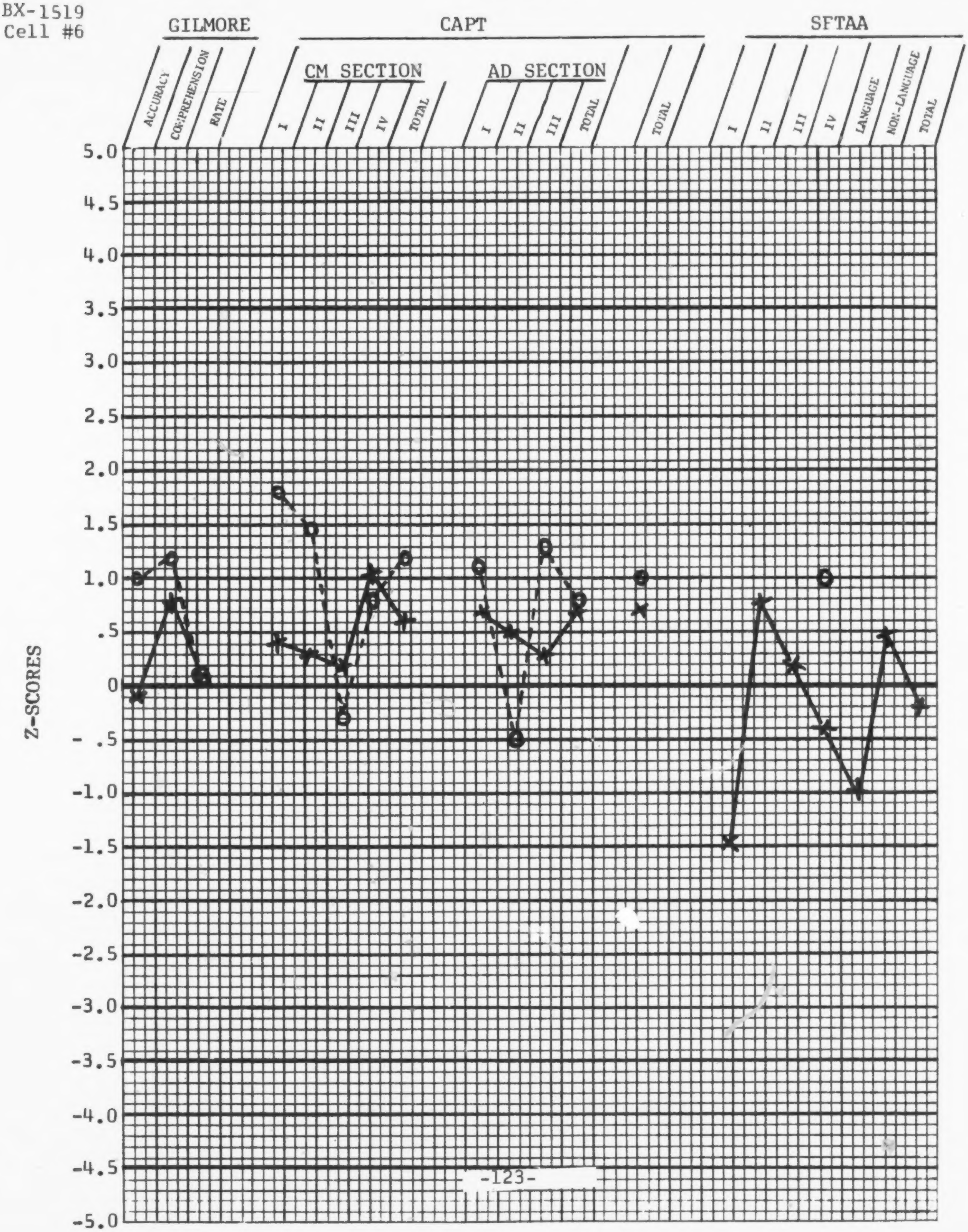
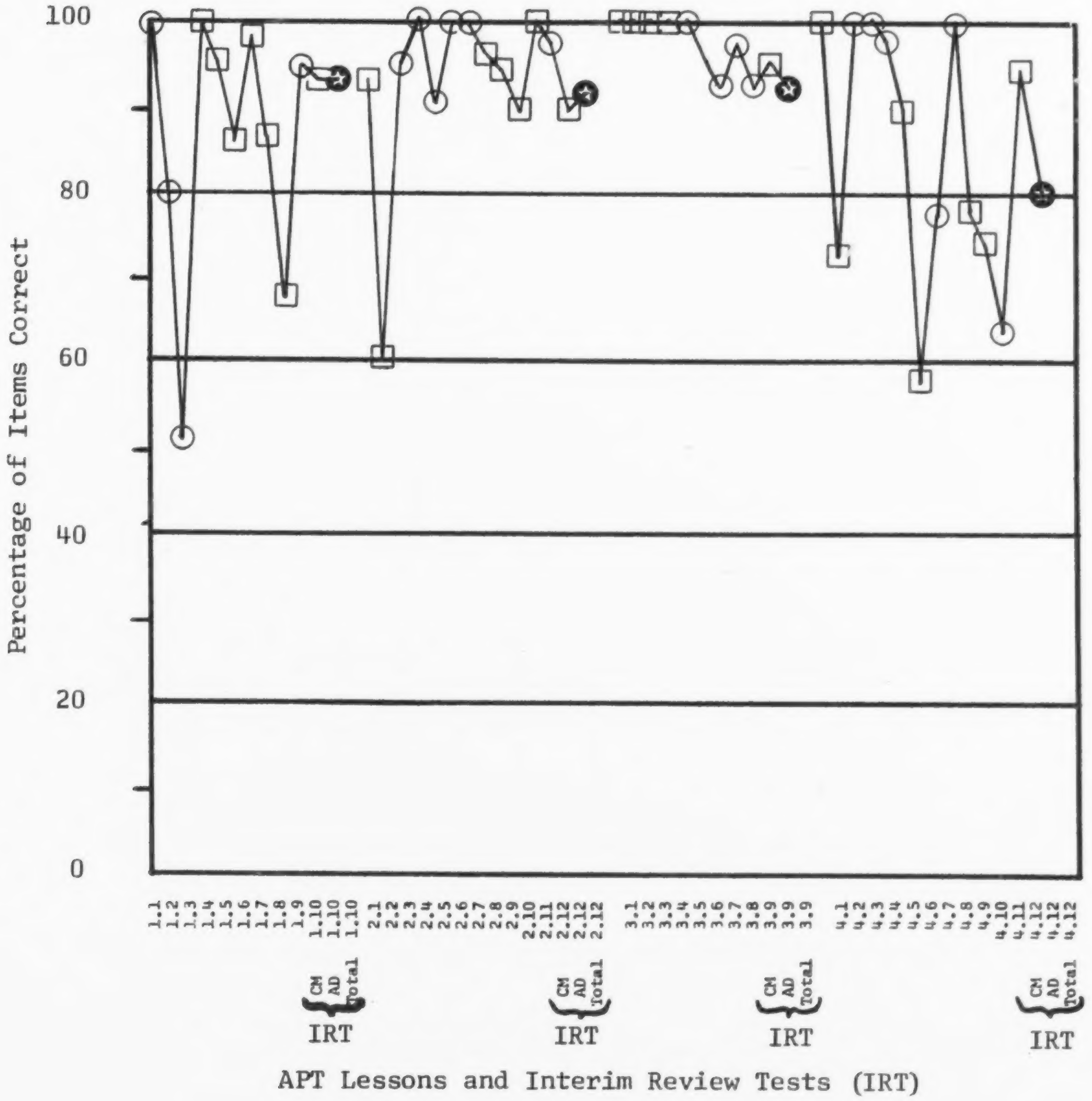


Figure 16a

Individual Student Profile

Matrix Cell No. 6 -- BX-1519

○ = CM (Competing Message) strand
☐ = AD (Auditory Discrimination) strand
✪ = IRT Total



LEGEND:

x ——— - PRETEST
o - - - - - POSTTEST

AX-0522
Cell #7

Figure 17

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

TEST ITEMS

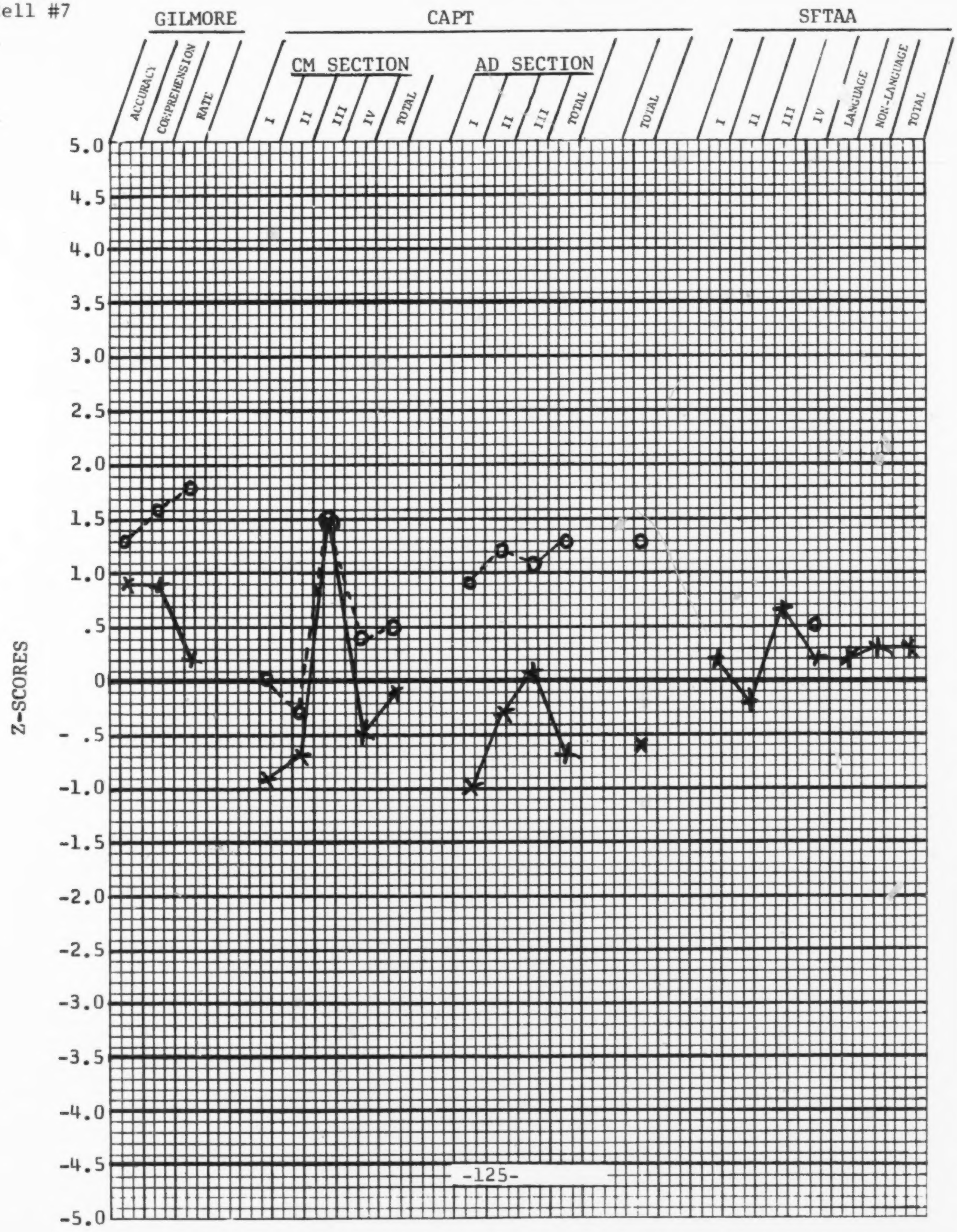
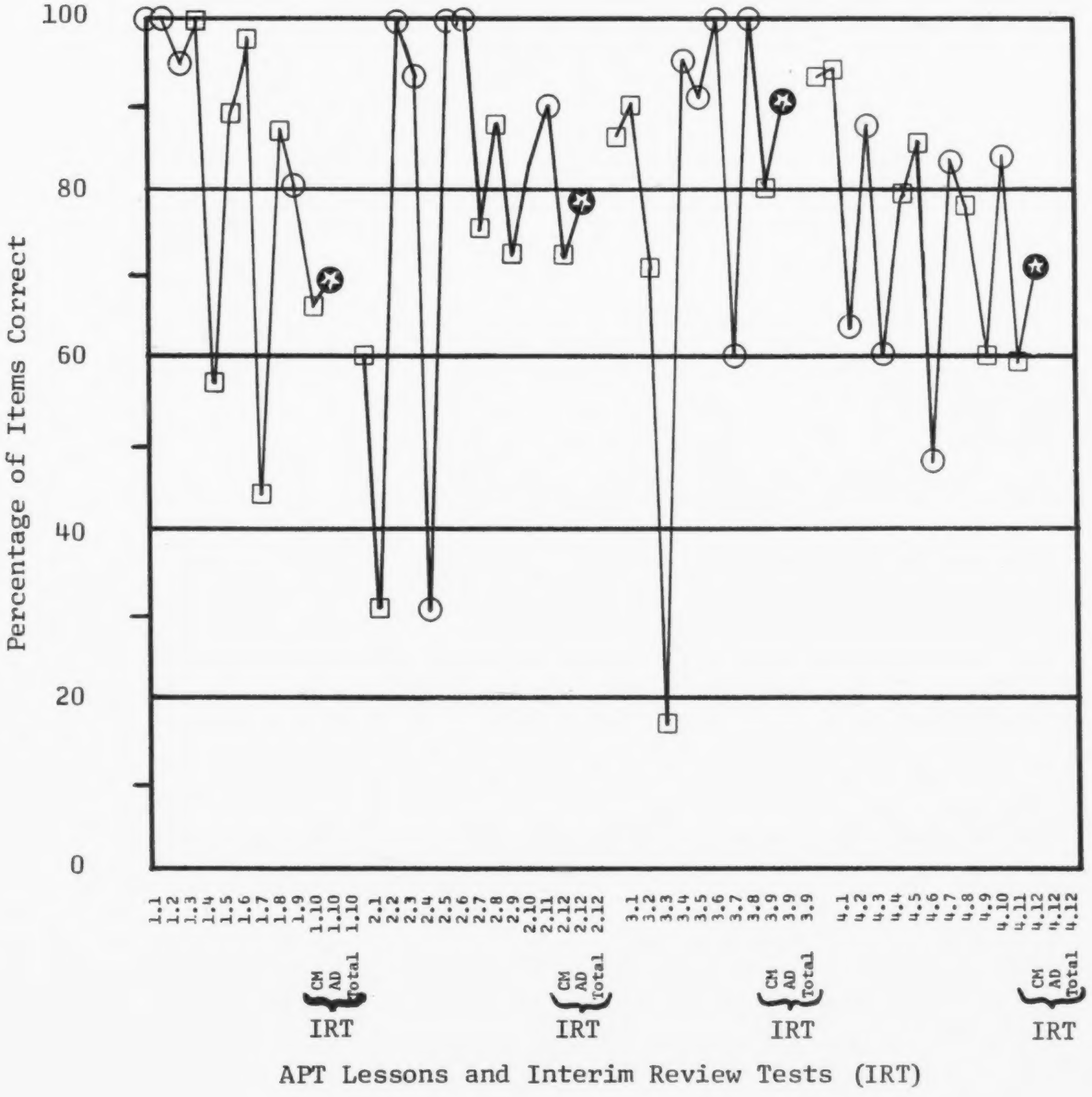


Figure 17a

Individual Student Profile

Matrix Cell No. 7 -- AX-0522

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total



LEGEND:

x —— - PRETEST
o ---- - POSTTEST

Figure 18

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

AX-0529
Cell #8

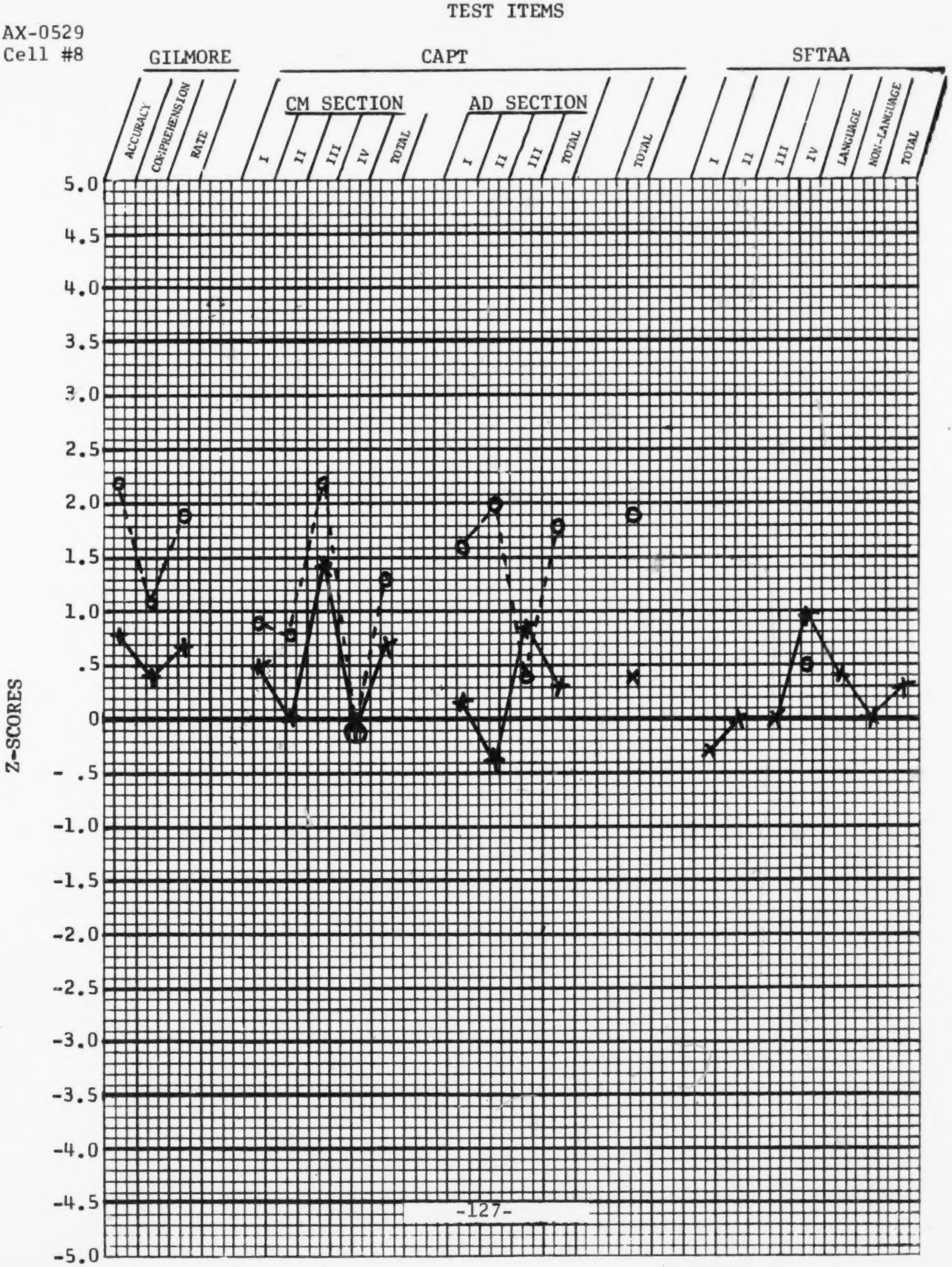
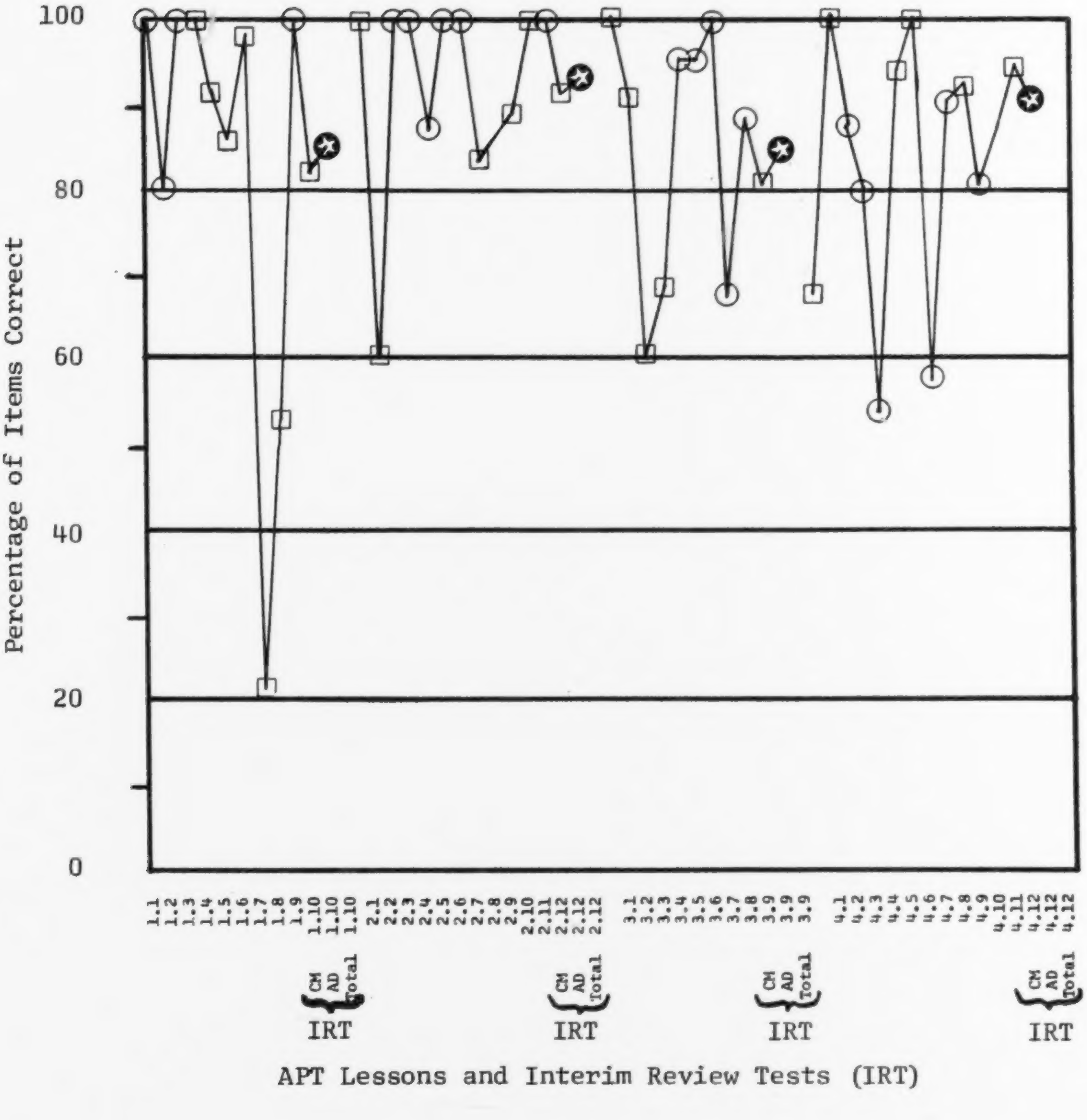


Figure 18a

Individual Student Profile

Matrix Cell No.__8 -- AX-0529

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total



LEGEND:

x —— - PRETEST
o - - - - - POSTTEST

Figure 19

STUDENT PROFILE - DIAGNOSTIC TEST BATTERY

1971-72

AX-0126
Cell #9

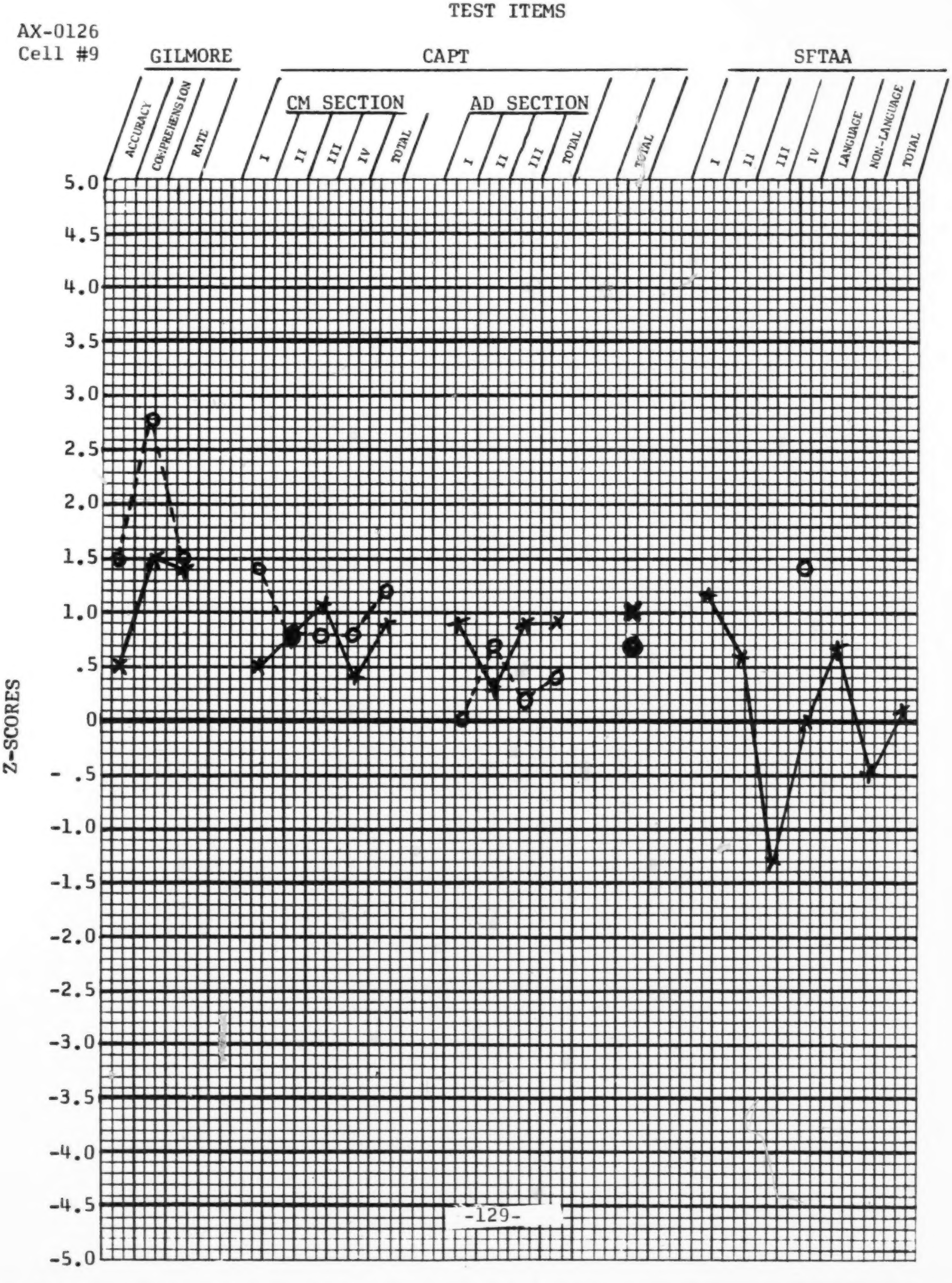
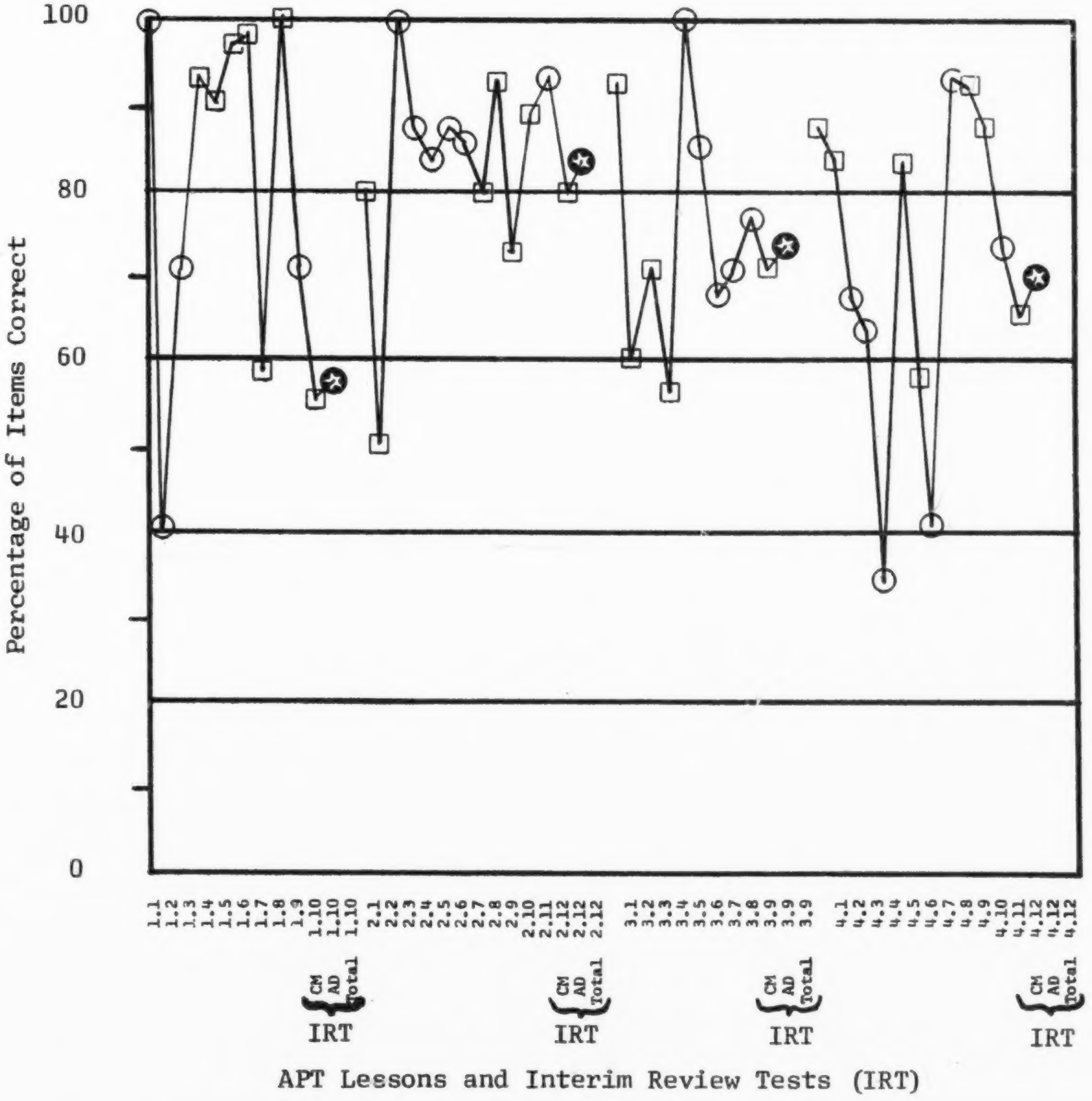


Figure 19a

Individual Student Profile

Matrix Cell No.__9 -- AX-0126

○ = CM (Competing Message) strand
□ = AD (Auditory Discrimination) strand
✪ = IRT Total

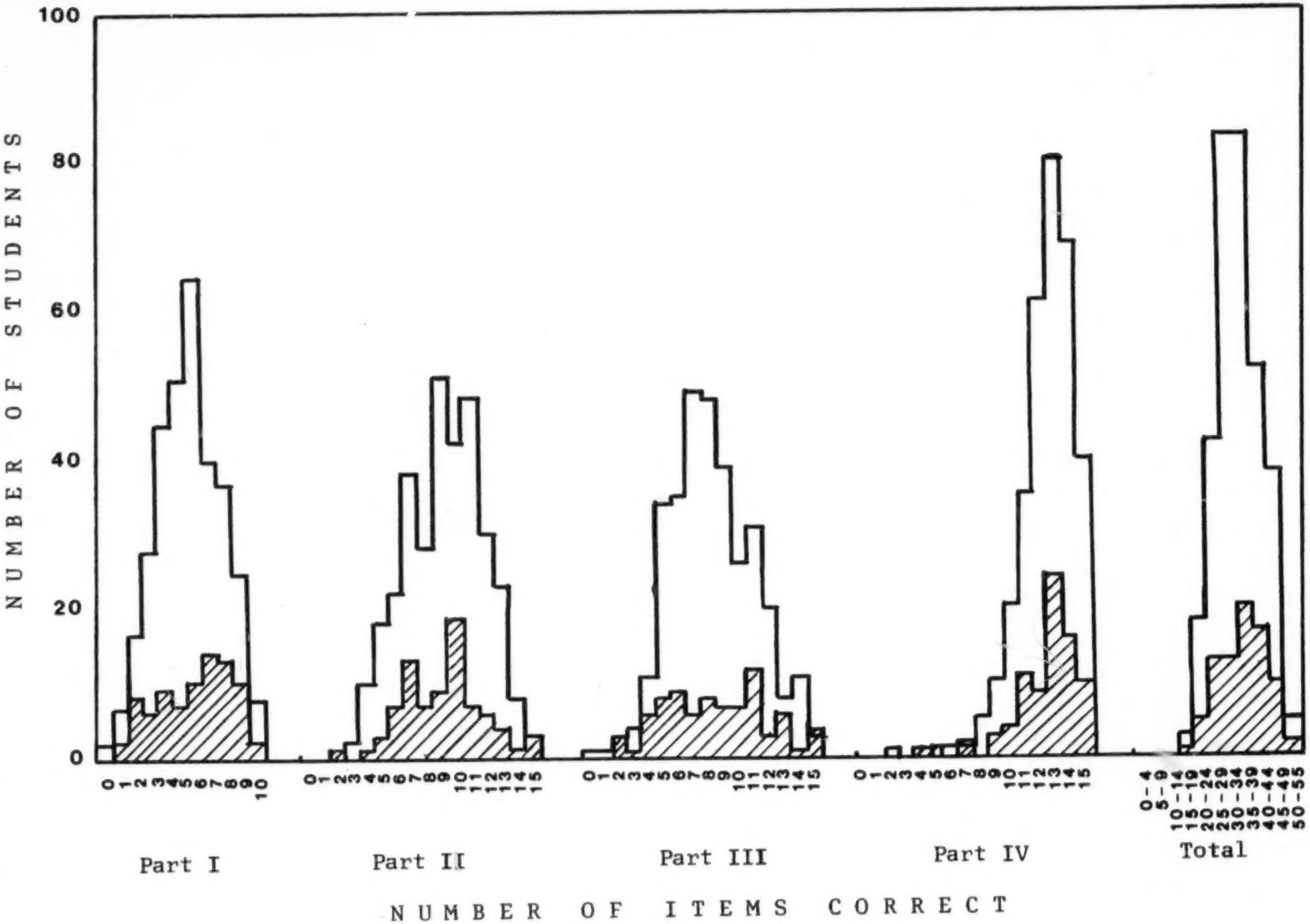


APPENDIX E

Histograms of Distribution of Scores on Pretest and Post Test CAPT for Groups A and B

Figure 20

HISTOGRAM: CAPT, CM Subtest - Pretest, October, 1971



N - 268 ▭ Group A

N - 74 ▨ Group B

Figure 21

HISTOGRAM: CAPT, CM Subtest - Post test, May, 1972

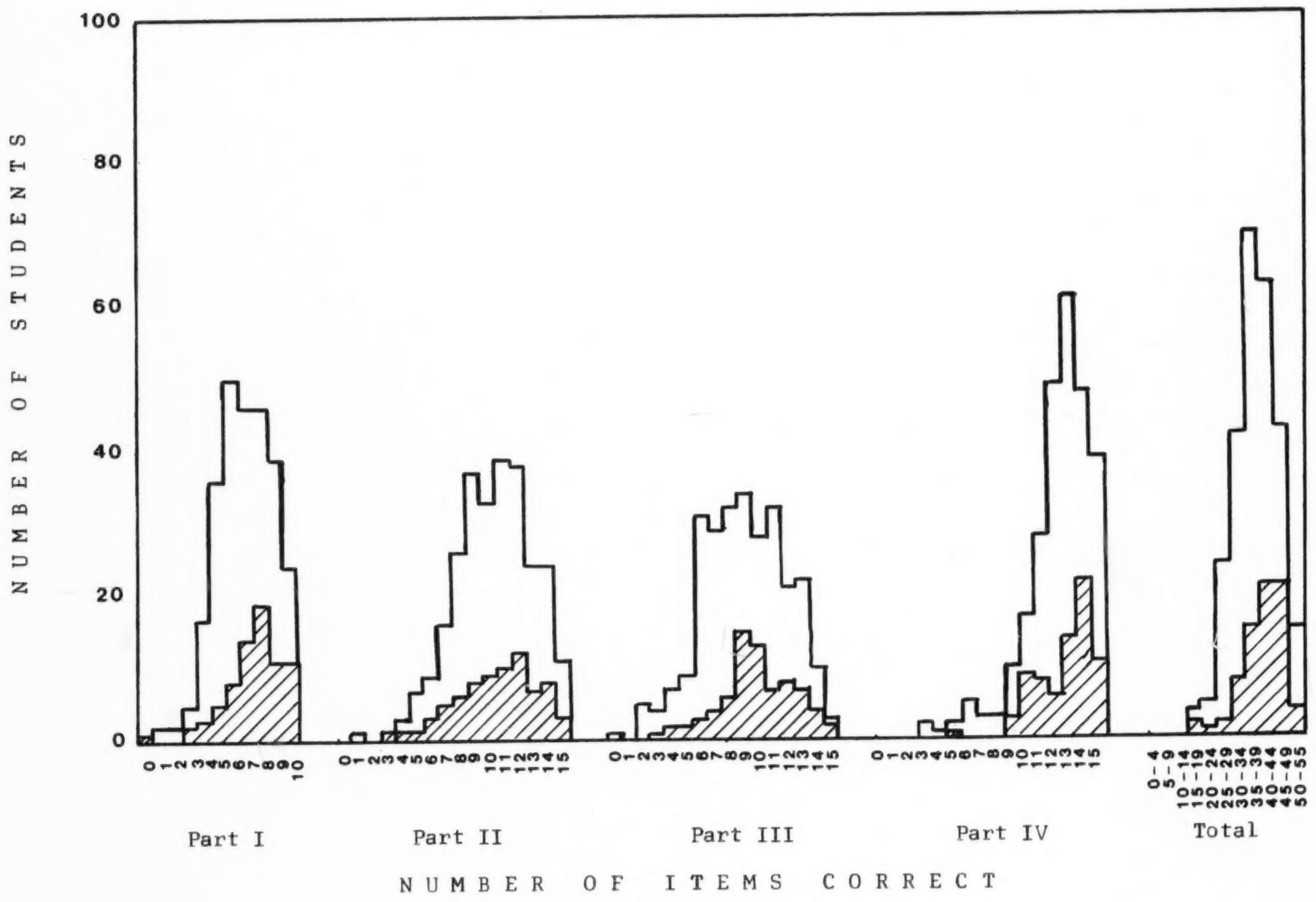


Figure 22

HISTOGRAM: CAPT, AD Subtest - Pretest, October, 1971

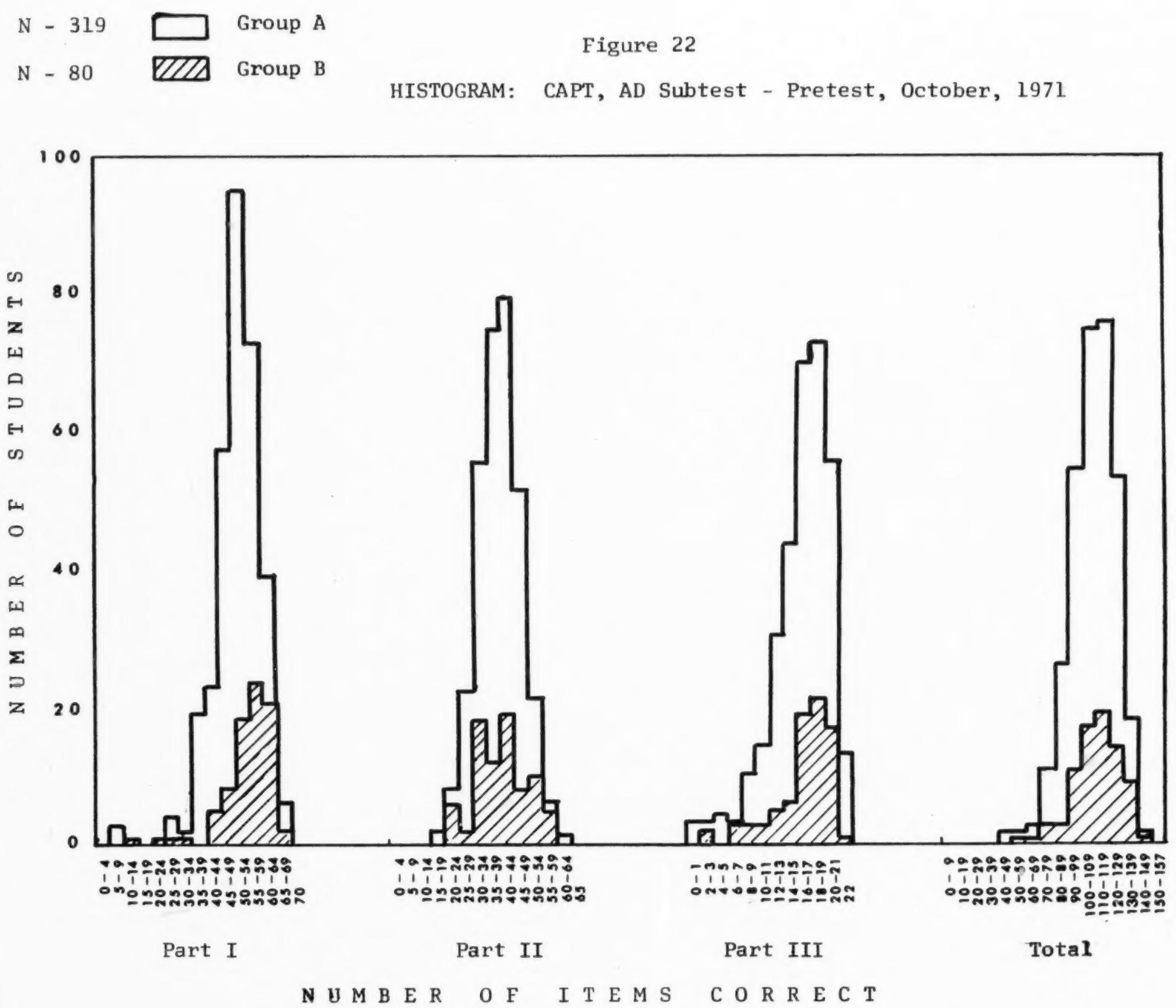
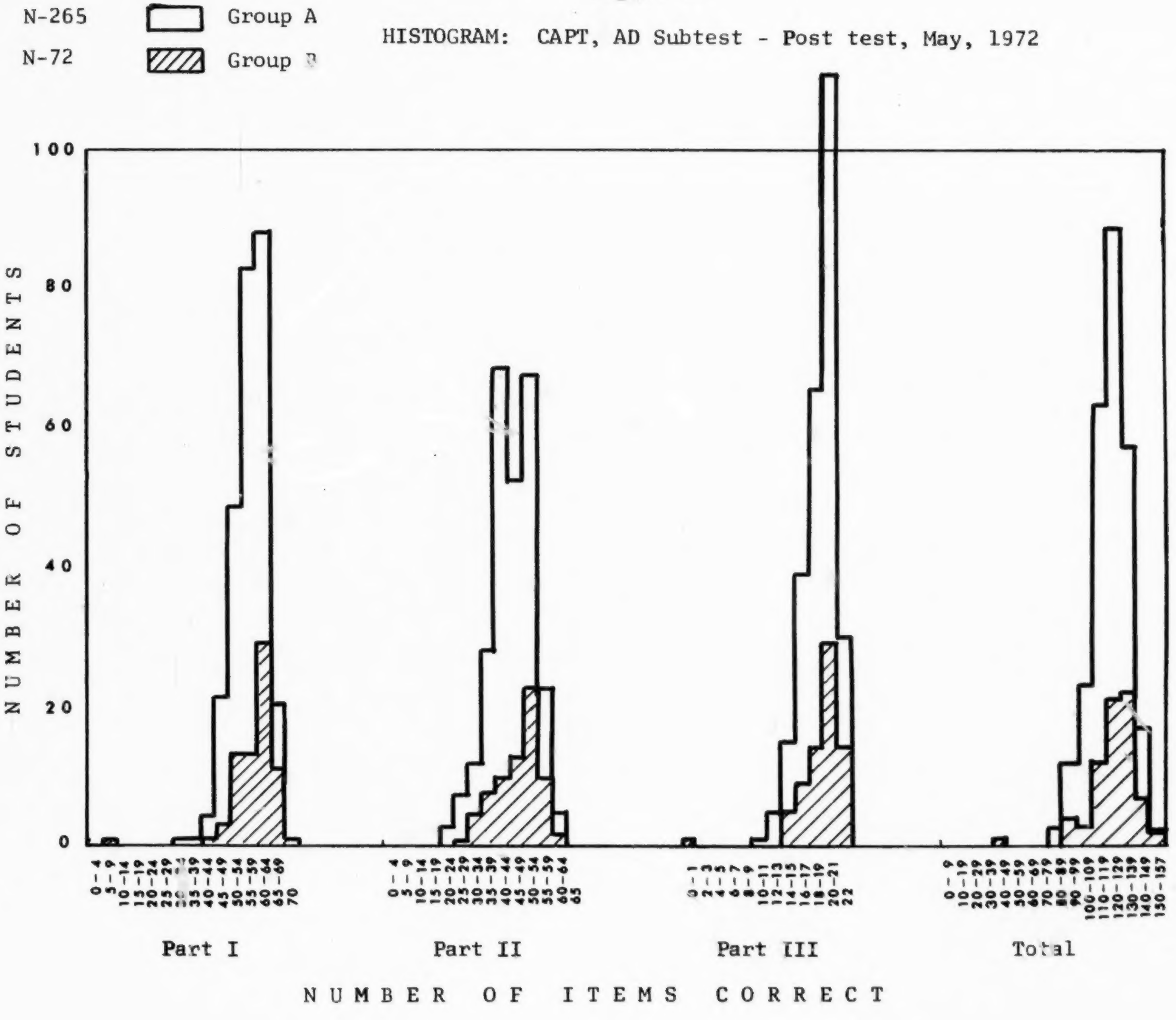


Figure 23

HISTOGRAM: CAPT, AD Subtest - Post test, May, 1972



APPENDIX F

Reading and Listening Survey

READING IMPROVEMENT THROUGH
AUDITORY PERCEPTUAL TRAINING

BELLE RUTH WITKIN, PH.D.
DIRECTOR
224 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94544
ROOM 178
(415) 783-5800 EXT. 372

January 24, 1972

Dear Parent:

Your child, ______________________, is participating this year in a special program to help pupils in elementary schools learn to listen and read better. Several hundred children are trying new kinds of materials, which have been developed especially for schools in Alameda County under a federally funded project. To help us plan lessons that relate to the experiences and background of all children in the program, we need to know more about them and their families. We would appreciate your answers to the questions on the enclosed survey.

Neither your name nor your child's is required and will not be used in this study, since we are only concerned with group performance. Please complete the questions and return the survey in the enclosed stamped self-addressed envelope by February 1. Do not sign your name.

Thank you very much for your cooperation.

Sincerely,

Belle Ruth Witkin

Belle Ruth Witkin, Director

BRW:et
Encs.

AN ESEA TITLE III PROJECT (PL. 90-247) • OPERATED BY THE ALAMEDA COUNTY SCHOOL DEPARTMENT, ROCK LAFLECHE, SUPERINTENDENT

READING IMPROVEMENT THROUGH
AUDITORY PERCEPTUAL TRAINING

LISTENING AND READING SURVEY

THINGS WE NEED TO KNOW ABOUT YOUR CHILD

1. Is he/she the oldest? ☐ youngest? ☐ in the middle? ☐

2. About how many hours does your child spend each day in the following?

watching T.V. ______
listening to radio ______
reading at home ______
playing outside ______

	Yes	No
3. Do you think your child is a good listener?	☐	☐
4. Do you think the school should provide more instruction in listening?	☐	☐
5. Do you think your child is a good reader?	☐	☐
6. Are you satisfied with the way the school is teaching your child to read?	☐	☐

7. As a parent, how do you think your child learns best? (check one or more)

showing him ☐
telling him ☐
having him read something ☐
rewarding him ☐
letting him find out for himself ☐
having him look at pictures ☐
having him work along with you ☐
other (specify)____________________

	Yes	No
8. Does your child have any special problems in learning that the schools should know about?	☐	☐

9. If yes, what are they?____

____

THINGS WE NEED TO KNOW ABOUT YOUR FAMILY

1. Please check the family members living at home:

father ☐ brothers ☐ how many?______ sisters ☐ how many?______

mother ☐ others (specify)__________________________________

2. Who is the head of the household? (Check one)

father ☐ mother ☐ guardian ☐ other (specify)_____ ____________

3. What kind of work does the head of the household do? (Be as clear as you can about the work.)____

	Yes	No
4. Is the head of the household employed now?	☐	☐
5. Is the head of the household self-employed?	☐	☐

6. How far did the head of the household go in school? (Check one)

less than 7th grade ☐ grades 7, 8, or 9 ☐ grades 10 or 11 ☐
high school or trade school graduation ☐ some college ☐
4-year college degree ☐ graduate professional training ☐

READING IMPROVEMENT THROUGH
AUDITORY PERCEPTUAL TRAINING
224 West Winton Avenue, Hayward, California 94544

Enero 24, 1972

Estimados padres:

Su hijo(a)______________________________ está participando este año en un programa especial para ayudar a los alumnos de las escuelas elementales a leer y escuchar mejor. Varios cientos de alumnos está usando materiales educativos nuevos, los que ha sido diseñados en nuestro condado usando fondos del gobierno federal. Para ayudarnos a planear lecciones que se relacionen mas a las experiencias de todos los niños en el programa, necesitamos saber más acerca de ellos y de las familias de donde proceden. Lo apreciaríamos muchísimo si Ud. pudiera contestar las preguntas que se encuentran en el formulario que adjuntamos.

No se require que Ud. ponga su nombre o el nombre de su hijo(a) porque estamos más interesados en lo que el grupo total de niños puede hacer. Favor de completar las preguntas y devolver el formulario usando el sobre que se adjunta y antes del lo. de Febrero. Recuérdese de que no es necesario poner su nombre en el formulario o en el sobre. Muchísimas gracias por su cooperación y ayuda.

Sinceramente,

Belle Ruth Witkin

Belle Ruth Witkin, Director

INVESTIGACION SOBRE "LEER Y ESCUCHAR"

INFORMACION QUE NECESITAMOS ACERCA DE SU HIJO(A):

1. ¿Es él/ella (la) mayor de todos los hijos? _____ es él (la) menor?_____
   es él(la) del medio? _____.
2. Mas o menos, cuantas horas pasa su hijo(a) por día:
   mirando la televisión _______ leyendo en casa _________________
   escuchando la radio _________ jugando fuera de la casa _________
3. ¿Piensa Ud. que su hijo(a) es un buen oyente?......... Si_____ No_____
4. ¿Piensa Ud. que la escuela debería proveer más
   instruccion en como llegar a ser un buen oyente?...... Si_____ No_____
5. ¿Piensa Ud. que su hijo(a) lee bien?.................. Si_____ No_____
6. ¿Está Ud. satisfecho(a) cómo la escuela le está
   enseñando a su hijo(a) a leer? .... Si_____ No_____
7. De acuerdo a su experienca ¿cómo piensa Ud. que su hijo(a) aprende mejor?
   (márque uno o más de los siguientes)
   - mostrándole _____
   - explicándole _____
   - dejándole que lo descubra por si mismo _____
   - dejándole que él lo lea _____
   - mostrándole fotos or dibujos ______
   - dándole premios _____
   - trabajando con Ud. _____
   - otra manera (favor de escribirla)
     ____
     ____
8. ¿Tiene su hijo(a) un problema especial en aprender que
   la escuela debería saber?............................ Si_____ No_____
9. Si contestó si a la pregunta, favor de explicar ____________________
   ____

INFORMACION QUE NECESITAMOS SABER ACERCA DE SU FAMILIA:

1. Favor de indicar los miembros de la familia que viven en su casa:

   padre ______ hermanos ______ cuántos ______

   madre ______ hermanas ______ cuántas ______

2. ¿Quién es el jefe de la familia? (márque uno)

   padre ______ guardián ______

   madre ______ otra persona (favor de especificar)______

   ____

3. ¿Qué clase de trabajo hace el jefe de la familia? (favor de explicar lo mejor que pueda) ____

   ____

4. ¿Está el jefe de la familia empleado ahora? Si ______ No______

5. ¿Es el jefe de la familia empleado en su propio negocio? Si_____ No_____

6. ¿Cuántos años de escuela completó el jefe de la familia?

   menos del 7o. grado ______ universidad ____________________

   grados 7, 8,o 9 __________ grado universitario ____________

   grados 10 o 11 ______ graduado profesional ____________

   graduado de la escuela
   secondario o industrial ______

APPENDIX G

Evaluation of Use of Set 1.0 of APT Lessons in Bilingual Diagnostic Placement Program, Santa Ana, CA

by

Herb Michel, Perception Teacher

Choosing Participants

1. How were the children and the adults in the program chosen?

Adults were chosen because of expertise (perception instructor and speech therapist of special education complex). All 72 children in Bilingual Diagnostic Placement Program were eligible, but only 49 of those showed classroom auditory deficiencies, which, supported by low Goldman-Fristoe-Woodcock scores, qualified them to be subjects.

3. Were participants in the program involved in other programs?

Of the 49 subjects, many were involved in speech therapy sessions which often utilized auditory approaches.

4. How many participants left the program?

Four students left the program before it was ended.

5. Which participants left?

One subject was removed because of inability to attend and understand (after 1.1). Three students moved. The first book was given up to 1.3 with a break for post program testing in our program. All the 46 students participated up to that point. After our testing only 15 students worked on book 1.5 and book 2.1 (2.1 was extremely difficult).

7. Were there many participants added to the program to replace dropouts?

Yes, about 10 students were absent enough to have to review several preceding tests to reinforce their skills. No student was allowed to skip books (except the students on book 1.5 and 2.) and progression was book by book.

8. Did participants attend voluntarily?

No, each participating individual was scheduled into a time module with his group. There were no violent reactions against it and most attended pleasantly and with desire.

9. Was the evaluation group only a portion of the program group?

No, all the participants were evaluated. However, one group proceeded ahead of the others.

Describing Participants

1. Which participants received the program?

All students showing auditory difficulties in classroom and/or low scores on Goldman-Fristoe-Woodcock test.

2. How many participants received the program?

49 (one was removed because of inability to understand or attended inadequately) but 3 left after completing pages 3A and B of book 1.3.

3. What are the ages or grade levels of pupils in the program?

Ages of students:
6 - 1
7 - 6
8 - 8
9 - 14
10 - 10
11 - 7
12 - 3
One removed was 7 years old.

4. Did the program serve many more boys than girls, or vice versa?

The program served more boys than girls. There were 30 boys and 19 girls. The one removed was a girl.

5. What achievement scores were available before the program with which to describe the program group.

Children were functioning at least 2 grade levels below their normal chronological placement. Some were even less and one was untestable. The Wide Range Achievement Test (WRAT) was our measurement tool.

6. Are there other special characteristics you should mention in describing the program group?

All educational problems were represented - limited eye sight, poor learning, attending difficulties, and mental processes.

Measuring Changes

1. What measures were applied to find out whether the program's aims were achieved?

A behavioral objective of 75 percent correct on each page was established for all students and was recorded as either achieved ( ) or not achieved (-). Then the whole book had to have a minimum score of 75 percent correct or the book had to be repeated before the next one could be attempted. Positive performance indicated adequate achievement and negative performance meant at least one repetition of the book. With a positive score after a negative one, the child gave evidence of his growth (which was our sole aim).

2. How were the measures matched to the objectives?
and
3. How were the measures matched to the pupils' capabilities?

More pre-performance instruction was given to lower mental age students, a special device was fitted to help the girl with eye problems to focus on the correct figures. Only four students were tested at a time and each was fitted with ear phones. The objective did not change for individual children because the skill that was being developed is one all children will need, and the objective seemed a minimum level necessary for all.

4. Were observers specially trained?

Not other than observations in Fremont and other readings. The Speech Therapist, however, is well versed on auditory problems and programs.

5. How much time elapsed between testings?

Testing was done two days a week (each group worked either Tuesday and Thursday or Monday and Wednesday) for four straight weeks.

Comments: With our children it appeared that more stimulation was needed to hold attention. Perhaps color will help. It seemed that the progression of skills was too rapid or required too many tasks in sequence - such as (1) finding right row, (2) using right colored pen, (3) hearing the sound clue, (4) make the correct mark, (5) on the correct picture. I would like to use this program next year with EMR children with mental ages of at least 10 years on a single basis - not groups.